The Bradshaw Lecture

ON

GUNSHOT INJURIES OF THE ARTERIES.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

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MR. VICE-PRESIDENT AND GENTLEMEN,—I propose to devote this lecture to the subject of gunshot wounds by bullets of small calibre.

Although the practice of military surgery is confined to a comparatively limited number of surgeons, yet the choice of this subject seems appropriate, since the boundary which separates civil and military surgery is indefinable, and I myself have enjoyed some experience in either field. Again, we may not forget that many Fellows of this College, only to mention such names as those of the Bells, Guthrie, and MacCormac, have devoted their attention to this subject; while our master, John Hunter himself, founded one of his greatest works on the observations made during his period of military service.

A certain halo of romance seems to shed itself over the subject, since the history of the surgery of gunshot wounds extends to very ancient times and brings us into contact with the most famous pioneers in surgery, while no great event in the history of the world remains unspoken of in its annals.

At all periods the opportunities afforded by the field of battle have exercised a strong attraction to the surgeon, both from the instinct of patriotism and the fact that in no other branch of surgery can experience be so rapidly gained. One battle can afford more material and that of more varied nature than many years of experimental work.

The progress of military surgery has some special characters of its own, thus its practice depends on opportunities which may be few and far between, while the injuries to be dealt with undergo changes and modifications dependent upon the development of the weapons with which they are inflicted.

It is of interest to remark the varying influence of civil upon military practice, and of the experience gained during wars upon the civil surgeon in the history of the past. In old days there were reasons why the military surgeon should stand out pre-eminent, the field of surgery was not wide, while the operations practised in civil work were the same, which the military surgeon had vastly increased opportunities of performing. Again, the actual difficulties under which military surgery has to be carried out have offered opportunities for the observation of the powers of Nature, often accidental but none the less of immense importance in the development of the great principle of conservatism in surgery.

I may mention such examples as the omission of the use of boiling oil to the wound by Paré, the substitution of the ligature for the cautery in amputations, or the evidence adduced by Hunter in favour of his opinion that gunshot wounds should not be enlarged, founded on the cases of four men who escaped being subjected to this treatment in consequence of being accidentally cut off from the army, and whose wounds healed readily without any complication. More recently the same influences have had an important bearing on the application of the ordinary rules of surgery to such injuries as wounds of the arteries, fractures of the bones, and perforating wounds of the abdominal cavity.

Advances in the surgery of civil life now exercise a constant influence on every branch of military practice, beyond which intervals of peace have been utilized by the military surgeon in experimental work bearing upon the effects likely to be produced by weapons introducing new ballistic problems, and varying wounding power.

WOUNDS OF ARTERIES.

A consideration of the progress which has been made in every department of military surgery is naturally too wide a field for a single lecture; it has therefore seemed to me more convenient to confine my remarks to the subject of wounds of one series of structures, the arteries. This is perhaps the more fitting, since the last decade has furnished us with remarkable evidence of the amenability of the wounded vessel to other forms of treatment than that of its obliteration by the application of a gross ligature.

Before proceeding to the actual consideration of the wounds of the vessels, it may be useful to epitomize the changes which have taken place in the bullet which produces them.

Changes in Bullets.

These changes consist in a decrease in the size and weight, and increased stability in form and structure. With these modifications in design are associated an increase in velocity and accuracy of flight and consequent greater striking force.

The most striking modification during the last decade has been the adoption by some powers of the pointed bullet. This alteration in the outline of the bullet is designed to overcome aërial resistance to its progress and thus obtain a greater velocity of flight and striking power. While attaining these advantages, the necessary shifting backwards of the centre of gravity of the bullet, increases the difficulty of maintaining flight parallel to its long axis; and experimental work has suggested that this last character would result in more serious wounding capacity, since slight inaccuracies of impact suffice to result in a sudden somersault of the bullet and a consequently greatly increased surface of resistance to its entry into the body, with attendant widening of the area of tissue destruction.

Such information as is at present to hand from the recent battlefields in the Balkans does not seem to have substantiated this assumption. Surgeons, indeed, appear to agree that reversal does take place more frequently, especially at long distances, that the bullet is somewhat more frequently retained in a reversed or transverse position; but although this must result in a widened area of contused tissues no very marked influence on the general character of the wounds was observed. One peculiarity mentioned by Major Birrell is of practical importance, namely, the tendency of retained bullets to travel short distances in the tissues, such as a needle does. Most observers regard the wounding power of the new bullet to be about equal to that of the ogival or dome-tipped bullets of corresponding calibre. They describe a similar passage of the pointed bullet in a direct course through the trunk and limbs, but a perusal of the report leads one to believe that so-called contour wounds of the head[1] and trunk were somewhat more common than was the case with the ogival or dome-tipped bullets used in the South African war, and this occurrence is probably to be ascribed to the decrease in stability of flight the pointed bullet possesses.

In the case of injuries to narrow structures, such as the blood vessels and peripheral nerves, the new bullet appears by reason of its sharp point and penetrating power to cause even more clean and narrow perforations than its predecessors. With regard to wounds of the blood vessels, it is of interest to note that one observer states that of 15 cases of aneurysm treated by him the bullet was retained in more than a third of the whole number.[2] I have only come across the description of one case[3] in which the retained core of a small calibre bullet closed the lumen of the femoral artery; this occurred in the Manchurian war.

Wounds the main importance of which depends upon the implication of the large vascular trunks have been a common characteristic of gunshot injuries for all time, and certain features of these injuries have undergone no material change. Thus the comparatively small tendency to be accompanied by great primary haemorrhage, the frequency with which they are followed by secondary haemorrhage, or the development of haematomata or aneurysms. The most striking feature of the vascular wounds produced by bullets of small calibre is the lessened liability to afford external secondary haemorrhage and the greatly increased frequency in which they are followed by the development of some form of aneurysm. This change no doubt depends in some measure upon improved methods of surgical treatment, but in the main is due to the limited nature of the wound, its narrow track, its

comparative asepticity and the infrequency with which extraneous matter is introduced with the bullet.

Certain special characters of the older bullet wounds of vessels, such as the temporary control of haemorrhage by the retained bullet, the retention of the bullet within the lumen of the vessel, or the travelling of the bullet along its course, have become far less common.

Primary Haemorrhage.

Let us now consider how far the older surgeons were justified in their opinion that primary haemorrhage due to gunshot injuries of the vessels is to be regarded as less formidable than that resulting from injuries by other weapons.

I think their opinion may be fully supported by a glance at a few specimens placed upon the table:

I. (3051) *R.C.S. Museum.*—Gunshot wound of the first part of the aorta; the bullet is retained within the lumen of the vessel, while the aperture of entry is partially closed by a plug of skin and adipose tissue; the man did not die until the third day.

II. (34.2) *Museum of the R.A.M.C.*—A large lateral wound of the common carotid artery and complete division of the internal jugular vein. This wound was followed by secondary haemorrhage on the thirteenth day, and the man did not die until after a recurring secondary haemorrhage on the twenty-fourth day.

III. (34.6) *Museum of the R.A.M.C.*—A round-shot lateral wound of the femoral artery with complete division of the vein. Secondary haemorrhage occurred on the eleventh day and death upon the twelfth.

In each of the two latter specimens the wound in the artery is partially closed by firm clot, and it is reasonable to assume that under modern wound conditions the occurrence of secondary haemorrhage would have been replaced by the formation of an aneurysm. Again, both in the case of the wounds of the carotid and the femoral, the loss of substance is not more than might be dealt with by modern methods at the period at which the secondary haemorrhage took place.

Anatomical Characters of Injuries inflicted upon the Blood Vessels by the Bullet of Small Calibre.

It is natural to assume that the wounds will not materially differ in nature from those observed on the surface of the body. The skin and the vessel wall possess many characters in common; both are elastic and both offer but slight resistance to the passage of the bullet, the only marked difference lying in the contractility of the artery, which tends to close and at any rate temporarily diminish the size of the opening made in its wall.

We are aware that in elastic structures like the blood vessels the area of tissue destruction will be less extensive than one corresponding to the calibre of the bullet, also that the revolution of the bullet and the force it exerts laterally as a result of its generally conical form tends to displace the component parts of an elastic cord such as a nerve without free transverse division of the fibres.

The injury to a blood vessel may be either of the nature of a contusion or a wound, while the extent of the lesion varies according to the accuracy with which the course of the vessel is traversed. With rectangular impact a notch, a clean perforation, or complete division results; when the impact is oblique more extensive loss of substance follows, such injuries reaching their most marked degree when the bullet courses for some distance directly along the vascular cleft. It need only be mentioned that when the wound is complicated by a fracture of a bone the injury to the artery may be produced by a spicule of bone, and partake of the nature of a puncture or a more or less complete laceration.

Contusion of the Vessel Wall.

It is difficult to gauge the importance of this injury. There is no doubt that the contusion may be sufficiently severe to so damage the tissue of the vessel wall that in the event of infection and suppuration the injured area may give way and, separating, give rise to secondary haemorrhage. That this accident may occur is a common experience. Judging by my own observation, I think it is also probable that contusion may be followed by the development of a cicatrix which permanently narrows the calibre of the vessel, and may possibly lead to its complete obliteration.

A specimen of Mr. Guthrie's, preserved in the museum of the Royal Army Medical College, shows the femoral vessels entirely occluded in the neighbourhood of a suppurating bullet track passing behind them. In this instance, of course, the greater contusing power of the old leaden bullet must be borne in mind. In the case of aseptic wounds I doubt if contusions often give rise to troublesome after-results.

Some information is to hand as to the comparative frequency and results of the different varieties of wound of the vessel wall. Thus Surgeon-General Stevenson,[4] in his report on the South African campaign, includes the nature of the lesion in 16 cases of aneurysm which underwent operation:

Eight were lateral wounds, resulting in six arterial and two arterio-venous aneurysms.
Four were perforations, resulting in one arterial and three arterio-venous aneurysms.
Four were complete divisions.

Saigo[5] includes the nature of the lesion in 34 cases:

Of these 21 were lateral wounds, resulting in 13 arterial and 8 arterio-venous aneurysms.
Eleven were perforations resulting in 4 arterial and 7 arterio-venous aneurysms.
Two were complete divisions.

In a total of 50 cases we find:

29 lateral wounds	... ...	58 per cent.
15 perforations	... ...	30 ,,
6 complete divisions	... ...	12 ,,

It appears also that perforation of the vessels more frequently leads to the development of an arterio-venous aneurysm than does a lateral injury.

Naturally little information exists as to the results of incomplete lesions, but two observations of great interest may be noted. In one a graze of the femoral artery resulted in the development of a protuberance the size of a hazel nut, accompanied by the signs of a traumatic aneurysm. An attempt was made to cure the condition by suturing the outer coats of the vessel over the weakened spot (Babasinoff). This procedure failed, the aneurysm again developing, after which the artery was successfully ligatured. The case is one of much interest also as demonstrating the necessity of the apposition of the intima for a successful arterial suture.

In the second case (Stevenson,[6] Case 23) a non-penetrating injury of the axillary artery was followed on the twelfth day by the formation of an arterial haematoma. On the fourteenth day this was laid open and a graze 1 in. in length, implicating the outer coats of the vessel, was discovered, which had given way in the centre.

Frequency of Various Classes of Wounds.

With regard to the comparative frequency of lateral wound, perforation, or complete division, it is probable that the numbers given above are not strictly accurate, since they are founded on observations made on lesions followed by the development of aneurysms, and fail to take into account the large number of cases in which haemorrhage either ceased spontaneously or led to death. One or two points of interest, however, arise from the consideration of this table (Table I) together with that (Table II) showing the distribution of aneurysms over the different arteries.

First of all, the frequency with which any artery is hit naturally corresponds directly with its calibre and the length of its course.

Secondly, if we analyse 42 cases, we find that the frequency of perforation depends not only on the width of the vessel, but also on its comparative fixity of position; thus perforation of the femoral and popliteal vessels is common, while the axillary artery, a trunk but little smaller, frequently escapes with a lateral injury.

The question of the frequency of complete severance of a large artery is more difficult to determine since it is probable that a considerable proportion of the instances in which it occurs are followed by early death from haemorrhage, but it is significant that in the series from

TABLE I.—*Saigo and Stevenson.*

	Lateral Wound.	Perforation.	Total.
Carotid	1	1	2
Subclavian	2	1	3
Axillary	6	1	7
Brachial	10	1	11
Femoral	7	8	15
Popliteal	1	3	4
Totals	27	15	42

which the above small table is taken complete division of the artery was observed six times, and that in five of these instances the popliteal was the vessel implicated; in the sixth the femoral artery was completely divided by a bony fragment from the femur. The liability of the popliteal artery to complete division is probably explicable on two grounds: (1) That the artery is commonly struck in the condition of full tension corresponding with the extended position of the limb; (2) that, except when the bullet enters from the posterior wall of the space, it has to perforate resistant structures, and hence may be altered in form and wounding properties.

As to the anatomical characters of the wounds, we are indebted to Brentano[7] for the only accurate description I have met with.

With regard to lateral wounds, he points out that the margins are tattered irregularly, giving the impression of having been gnawed out. Again, that a lateral wound involving more than half the circumference of the artery gapes widely longitudinally, acquiring a greatly increased size in consequence of the elastic nature of the vessel wall. The artery hence becomes incapable of conducting the blood, and the injury is comparable to a complete division. Perforating wounds do not separate so widely in consequence of the continuity of their margins; the loss of substance is also less, the size of the opening not equalling the calibre of the bullet. Perforations cause some obstruction to the circulation, due to the escape of blood, and the effect upon the vessel is to produce some proximal and a lesser distal dilatation of the lumen.

Immediate Results of Injuries.

In proceeding to a consideration of the results of these injuries it is of interest to premise that we are here met with one of the most striking anomalies of military practice, since we are about to deal with a series of complications not one of which would be met with did not the exigencies of the work in the field render it impracticable to abide by a fundamental rule of surgery—that is, that a bleeding vessel should be secured at the first possible moment after its injury.

Primary Haemorrhage.

The question as to the proportion of vascular injuries which lead to early death upon the field of battle seems one almost incapable of an answer. There can be no doubt that it is a large one, and in support of this it is only necessary to mention the fact that haemorrhage from, or aneurysms developing in connexion with, the large arteries of the trunk practically receive no mention in the large series of cases reported from recent campaigns. Operations upon the great vessels of the neck and the limbs are frequent, but, except for an occasional ligature of the external and still more rarely of the common iliac vessels, we find no mention of the vessel of the trunk. It seems, therefore, reasonable to assume that wounds of these vessels lead, with few exceptions, to rapid death. The same result probably follows a certain proportion of the wounds of the large vessels in the limbs also.

Spontaneous Healing of Arterial Wounds.

In connexion with this subject we may conveniently consider the question of spontaneous healing of the larger vessels. I think there is every reason to conclude that this, as either an immediate or remote sequence, takes place with a certain degree of frequency, on the following grounds: In the first place, clinical observation of wounds traversing the course of large vessels, as the subclavian or the femoral, has demonstrated the presence of local murmurs, pointing to local constriction of the vessel, also diminished pulsation in the peripheral circulation. Again, such diminished pulsation may be temporary. It may, of course, be suggested that in these instances the vessels have suffered contusion only, and that the signs are dependent on temporary thrombosis of the vessel or on pressure exercised by cicatricial tissue in the wound track on the artery. Hence the importance of definite evidence derived from observation of the conditions found in certain varieties of aneurysm.

First, as to the primary occlusion of the vessel by a provisional thrombus. This has been observed in several cases where the injury has been followed by gangrene of the limb (Manteuffel, Subbotich, etc.). The gangrene in such cases is comparable to that which sometimes follows primary proximal occlusion of the vessel by ligature.

Then as to immediate cicatrization of the wound. In Surgeon-General Stevenson's report (Case No. 96, under the care of Dr. Archibald Young) the following conditions were found in a patient who died of enteric fever fifteen days after receiving a wound which perforated the superficial femoral artery and vein antero-posteriorly at the apex of Scarpa's triangle. The wound of entry into the artery was closed by a small, firm clot embedded in the posterior aspect of the sartorius; the small circular exit wound was attached to a similar opening in the opposed surface of the vein; while the wound of exit in the vein was "nearly cicatrized." No extravasated blood was present either around or between the vessels.

A more astonishing observation was made by Brentano in the case of a wound traversing the abdominal aorta just above the origin of the renal arteries, and then passing through the liver. The patient died upon the seventieth day from a subphrenic abscess in connexion with the wound of the liver. The following condition was found in the aorta: The entry wound visible on the outer aspect of the vessel was circular, and looked like the proximal extremity of a small branch which had been cut off. The exit wound was slit-like in character. When the vessel was first opened the wounds were scarcely visible on its inner aspect. Both were firmly closed, while the exterior of the vessel was coated with a layer of plastic lymph, quite separate from the suppurating blood clot which lay around. This case recalls to my mind that of a patient I saw die suddenly with signs of an abdominal haemorrhage two days after the receipt of a perforating wound in South Africa.[8]

As to the condition discovered during operations, in five of eleven perforations in Saigo's series of extirpations of aneurysm, one of the two arterial wounds had cicatrized at the end of six months, four and a half months, thirty-nine, thirty-seven, and twenty-five days respectively. In one of these cases the scar bulged, and in the second a small consolidated aneurysmal sac was present at the site of the wound.

A second method of occlusion is by the adhesion of the surrounding vessels and nerves; such cases were observed by Sir W. MacCormac and Sir William Stokes. A striking instance observed by Major Holt is reported in Spencer's *Gunshot Wounds* (p. 68): "In dissecting out the upper end of the divided ulnar nerve in the upper arm I came across the divided brachial artery tied up in a scarlike tissue. Astonishment and curiosity led me to free the proximal end, and it at once bled as a normal brachial artery would. I tied it, and, to confirm matters, eventually found the lower end also in the scar."

Brentano, who draws special attention to this mode of healing, mentions a similar observation. It is noteworthy that in all four instances the brachial was the artery concerned.

Secondly, spontaneous cure may be the terminal result in arterial haematomata which contract to form circumscribed traumatic aneurysms and eventually consolidate. Of this sequence of events I have seen several instances, and they have been observed by many surgeons. I think we may conclude that the opening in the artery gradually contracts, the flow of blood into the aneurysm is lessened, and consolidation of the sac follows, as a result of the deposition of laminated clot.

A case of great interest is related by Saigo, in which the femoral artery was completely severed by a spicule of

TABLE II.—*Distribution of Aneurysms and Aneurysmal Varices.*
(South Africa, 98; Manchuria, 121; Balkans, 64.)

	Traumatic Aneurysms.				Arterio-venous Aneurysms.				Aneurysmal Varices.				Total.	Kikuzi.	Grand Total.	Percentage Occurrence.
	Stevenson.	Saigo.	Subbotich.	Total	Stevenson.	Saigo.	Subbotich.	Total	Stevenson.	Saigo.	Subbotich.	Total				
Carotid	—	1	—	1	4	—	—	4	—	1	1	2	7	1	8	2.8
External carotid	1	—	1	2	—	—	—	—	—	—	1	1	3	2	5	1.7
Internal carotid	—	—	1	1	—	—	—	—	—	—	—	—	1	—	1	0.35
Subclavian	—	2	—	2	—	1	—	1	—	—	1	1	4	7	11	3.83
Transversalis colli	—	—	—	—	—	—	—	—	—	—	—	—	—	3	3	0.5
Axillary	11	4	4	19	2	1	1	4	—	—	—	—	23	6	29	10.2
Subscapular	1	1	—	2	—	—	—	—	—	—	—	—	2	—	2	0.7
Brachial	6	6	2	14	2	3	—	5	—	—	2	2	21	10	31	10.9
Radial	1	—	1	2	—	—	—	—	—	—	—	—	2	5	7	2.4
Ulnar	3	—	2	5	—	—	—	—	—	—	—	—	5	4	9	3.13
Superficialis volae	1	—	—	1	—	—	—	—	—	—	—	—	1	—	1	0.35
Interosseous forearm	—	—	1	1	—	—	—	—	—	—	—	—	1	—	1	0.35
External iliac	1	—	—	1	—	—	2	2	—	—	1	1	4	1	5	1.7
Gluteal	—	1	1	2	—	—	—	—	—	—	—	—	2	1	3	1.0
Femoral	18	3	26	47	17	2	5	24	—	4	2	6	77	26	103	36.3
Profunda	2	—	—	2	1	1	1	3	—	—	—	—	5	—	5	1.7
Popliteal	13	2	3	18	5	2	2	9	—	—	1	1	28	16	44	15.5
Posterior tibial	7	1	—	8	—	—	—	—	—	—	—	—	8	3	11	3.83
Anterior tibial	1	—	1	2	—	—	—	—	—	—	—	—	2	—	2	0.7
Peroneal	—	—	1	1	—	—	—	—	—	—	—	—	1	—	1	0.35
Internal plantar	1	—	—	1	—	—	—	—	—	—	—	—	1	—	1	0.35
				132				52				14	198	85	283	

bone. The injury was followed by the development of two small aneurysmal sacs, one on either side of the proximal end of the vessel, while the distal end was completely occluded.

Thirdly, I think the development of a pure aneurysmal varix can only be regarded as an instance of the permanent arrest of haemorrhage by a spontaneous process of healing. In many such cases the primary absence of any trace of extravasated blood in the sheath of the vessels, except such an amount as may have ensured the firm lateral adhesions of the two vessels, points to a process resembling that following the ligature of a vessel. The opening is at first occluded by clot, formed on the margins of the wound in the vessel, which temporarily arrests the passage of the blood into the vein; this clot persists until, in the process of healing, the intima of the artery has become continuous with that of the vein. The provisional clot is then absorbed or washed away, as is the temporary thrombus developed after ligature, and we get the development of the characteristic thrill and murmur, with the establishment of the arterio-venous communication.

The period occupied by this process corresponds with the interval of days or weeks commonly noticed between the reception of the wound and the development of the purring thrill and murmur. Lastly, an aneurysmal varix may heal spontaneously many months after its development. In my book on the wounds of the South African war two instances of spontaneous cure of this nature in carotid arterio-venous aneurysms are described, the thrill and all symptoms disappearing some months after the application of a proximal ligature to the artery. A case of spontaneous cure where the communication was supposed to be between the innominate vessels is also related there, and many other instances of this sequence of events have been observed.

An instance of a still more remote closure of the opening in an aneurysmal varix is recorded by Sir W. Osler.[9] The patient was seen by me in 1900 with the classical signs of an aneurysmal varix of the axillary artery of twenty-two years' standing. When he died in 1909 no trace of any communicating opening could be discovered between the vessels, although both were dilated and the walls were much thickened. The drawing in the *Lancet* shows the vessels in intimate relation at the point of greatest dilatation.

These cases appear to afford definite evidence of the cure of a wounded artery either by an immediate or a remote process.

Secondary Haemorrhage.

The decrease in frequency of external secondary haemorrhage in gunshot wounds only brings them into line with the injuries of civil life, the decrease bearing a direct proportion to the decrease of infection and suppuration. When the small number of cases needing treatment by amputation or ligature mentioned in the reports of recent wars is contrasted with the formidable list recorded in the report of the older campaigns the change is striking indeed.

It cannot, however, be too strongly urged that although infection is less common, yet the second cause of secondary haemorrhage, disturbance of the wound incident on the transport of the patient, exists in an equal or exaggerated degree, and is unaffected either by the anatomical nature of the wound or the method of treatment adopted.

External haemorrhage is replaced by bleeding into the tissues, the extension of localizing arterial haematoma, or increase of blood collections in the pleurae, peritoneal cavity, or the joints. These accidents are sufficiently common to render absolute the rule that no subject of a wounded vessel should be submitted to the dangers of transport except in the case of actual necessity, and then only with the wounded part as far as possible immobilized.

The Development of Aneurysms.

The frequency with which wounds of arteries are followed by the formation of the different kinds of aneurysm is not possible to accurately determine, since so large a proportion of vascular wounds in war escape record.

The accompanying table (II), however, shows the general distribution of the lesions in 283 cases collected from reports of the South African (98), Manchurian (121), and recent Balkan (64) campaigns.

The next table gives in addition a rough estimate of the proportion in which the various forms of aneurysm occurred in 162 instances.

TABLE III.—*Proportion of Various Forms of Aneurysm in 162 Cases.*

	South Africa (Stevenson).	Manchuria (Saigo).	Balkans (Subbotich).	Total.	Percentage.
Arterial diffuse or localized	31	21	43	95	58.6
Arterio-venous aneurysm	33	10	16	67	41.3
Aneurysmal varix	—	5	3		
Totals	64	36	62		

It must be borne in mind, however, that these tables merely record the survival of the fittest, since they are based on cases treated in the base hospitals, and that a considerable number of small traumatic aneurysms, and a still larger number of pure varices, escape not only the surgeon but also any record whatever.

TREATMENT OF WOUNDED ARTERIES.

The question, At what moment the treatment of a wounded artery should be undertaken in military practice, is one fraught with the greatest difficulty. Reasons have already been given for believing death from primary haemorrhage, when the great arteries of the trunk are implicated, to be the common result, and to that point no further reference need be made, but in the case of wounds of vessels in the neck and limbs we know that a number might be saved who die from secondary haemorrhage or gangrene, and that a large number develop aneurysms which need operations of some severity before they are cured.

It is clear that primary ligature of the vessel would ensure the life and avoid the dangers attendant upon the aneurysm to this latter class did not the exigencies of military practice forbid the adoption of the common rule of surgery in the great majority of instances. If the patient is bleeding seriously, manifestly the ordinary rule must be followed, but if haemorrhage is slight or has ceased spontaneously, pressure and a first dressing will be applied and the patient sent to the rear. He now passes through the hands of the medical officers of the bearer company, the field hospital, the stationary hospital, and possibly of the ambulance train before he reaches the haven of the base hospital, at which alone extensive operations can be performed under the best conditions.

Once entered upon, until this transitory period is ended, not only are the general conditions and surroundings unsatisfactory as far as the operating surgeon is concerned, but experience has also abundantly proved the local condition of the wound to be eminently unsuitable for direct treatment. The wound cavity contains a large amount of clot and its walls are stiffened by extravasated blood and reactionary effusion. These conditions render the employment of drainage a necessity, a provision rendering the wound readily liable to the dangers of infection during transport.

These difficulties existing with regard to the comparatively simple operation of ligature acquire still more significance in considering the far more delicate operation of suture, requiring not only greater skill, but also more satisfactory surroundings, even putting on one side the question whether the recent gunshot injury of the artery is in itself a class of wound suitable to primary suture as to its fitness for direct union, or as to the risks of consequent gross thrombosis of the vessel.

Little actual experience of the primary suture has been gained, but such as exists is not of a nature to encourage the hope of any great future for this method of treating wounded arteries in military surgery. I think it indubitable that in the present state of surgery direct ligation, when necessary, is likely to remain the only operation suitable for application to the primary injury, and this rule is still more applicable to the treatment of external recurrent or secondary haemorrhage.

In military surgery it is, then, chiefly in the treatment of the secondary consequences of wounds of the arteries that the question of the relative applicability of ligature or suture of the vessel comes into consideration, in spite of the fact that a few isolated primary operations for suture have been undertaken with somewhat doubtful results.

This brings us to the question of dealing with arterial haematomata, traumatic aneurysms, arterio-venous aneurysms, and aneurysmal varices.

Both the recognition of aneurysm as a condition amenable to operative treatment alone, and every method of treatment now in use can be traced to the most ancient times. Arterio-venous aneurysm was described by Rufus of Ephesus in the first century, while Galen in the second century speaks of it as a well-known condition. Common during the long period that bleeding from the bend of the elbow was a routine practice, its frequency diminished as its source of origin became limited to occasional stab wounds and injuries from shot guns, only to become again enormously increased in connexion with the employment of the bullet of small calibre.

The simple employment of the ligature was supplemented between the first and fourth centuries by the addition of incision combined with proximal and distal ligature of the artery by Antyllus, while Philagrius introduced the further procedure of extirpation of the aneurysmal sac. After an interval of more than twelve hundred years the method of Philagrius was reintroduced by M. G. Purman in 1669, who successfully treated three cases of brachial arterio-venous aneurysm by proximal and distal ligature of the artery combined with extirpation of the sac.[10] From that period methods of treatment have varied, but no really new procedure had been employed until the application of the method of suture to wounded blood vessels opened up a new avenue.

The history of the application of a method of suture to an artery commenced with the closure of a wound of the brachial artery by "twisted suture" on a pin by Hallowell in 1759, while lateral suture of a vein was first performed by Schede in 1882. The first lateral suture of the femoral artery was made by Postempski in 1886, and the first successful complete circular suture on the human subject was performed by J. B. Murphy in 1896, of the femoral artery by his invagination method, this operation being followed by a similar one upon the axillary artery.

Since that period the technique of suture has been widely developed both in experimental work and in surgical practice, while the late war in the Balkans has allowed a fairly extensive trial of its suitability to the treatment of gunshot wounds.

Proximal Ligature.

The main outcome of the experience in the treatment of vascular injuries gained in the South African war was to emphasize the dangers of Hunterian ligature at the seat of election, especially in the vessels of the lower extremity, and to suggest various methods of dealing with arterio-venous aneurysms and varices. Of these latter, ligature of the artery above and below the communication, leaving the vein untouched, received the impress of official recognition, while double ligature of both vessels, proximal ligature of the artery with ligature of the vein above and below the opening (Lewtas) were performed successfully, and a number of cases of simple proximal ligature (Anel), especially in the neck and upper extremity, gave good results.

In the Manchurian campaign the chief change consisted in the greater frequency with which ligature of the vessels was accompanied by excision of the portion of the vessels involved together with the sac itself, and Syme's modification of the method of Antyllus, in which the sac is opened prior to the application of the ligatures to the wounded vessel, called by Kikuzi "intrasaccular direct ligation."

A series of results published by Saigo will suffice to illustrate the success with which extirpation was attended in skilled hands (Table IV). In Saigo's practice operation on the aneurysm was proceded by some days' or weeks' digital compression of the artery with a view to encouraging the development of the collateral circulation.

Table IV.—*Traumatic Aneurysms.*

	No.	Gangrene.	Died.	Complications.
Extirpation	15	14	1	Femoral.
Central ligature incision and subsequent extirpation	3	3	—	—
Antyllus	1	1	—	Brachial gangrene, amputation
Central ligature and incision	1	1	—	—
Incision and plugging... ...	1	—	1	Gluteal.
Total	21	19	2	

Arterio-Venous Aneurysm.

	No.	Cured	Complications.
Extirpation	11	11	—
Ligature of artery above and below; vein untouched	2	1	1 femoral gangrene, amputation.
Antyllus...	2	1	1 haemorrhage; secondary ligation.

In the recent war in the Balkans the method of suture of the vessels has been somewhat widely employed in the treatment of the secondary consequences of wounded arteries. The results of this method of treatment in the Belgrade State Hospital have been collated by Dr. V. Subbotich, and were communicated to the Section of Naval and Military Surgery at the recent seventeenth meeting of the International Congress of Medicine. I am much indebted to Dr. Subbotich for some supplementary reports regarding some of the cases, of which the result was unknown at the time his paper was written.

We may now proceed to compare the various methods of treatment employed during the last decade.

First, as to the time-honoured measure of ligature in its various applications. I think the entire concourse of surgical opinion is opposed to the operation of ligation at the seat of election. The tragic history of its employment in the treatment of secondary haemorrhage in the older campaigns has been followed in the more recent ones by an only qualified improvement in its application to the treatment of traumatic aneurysms.

Table V.—*Cases of Ligature (South African War).*

		No.	Gangrene.	Died.	
Secondary haemorrhage	Direct ligation	8	6	2	25.0 %
Secondary haemorrhage	Proximal ligation	11	7	4	36.3 %
Arterial haematoma	Direct ligation	27	27	—	—
Arterial haematoma	Proximal ligation	16	16	—	—
Circumscribed traumatic aneurysm	Direct ligation	4	4	—	—
Circumscribed traumatic aneurysm	Proximal ligation	14	13	1	—
Arterio-venous aneurysm	Proximal ligation	*14	6	3	21.4 %

57.1 % gangrene; 25 % of these died after amputation.
* Recoveries 11; amputations 6.

In the small number of cases noted in the South African war we find that 36.3 per cent. of the cases of secondary haemorrhage treated by proximal ligature died. The result in 30 cases of arterial aneurysm was better, no instances of gangrene being reported and only one death, 3.3 per cent., but in a number of these the proximal ligature was of the nature of an Anel's operation.

The worst results were those following proximal ligature for arterio-venous aneurysms. Here, of 17 patients 3 died, and in 8 the operation was followed by gangrene. If 3 operations on the carotids are subtracted, we find 14 cases of ligature of arteries of the extremities, with 2 cases of gangrene in the upper and 6 in the lower limb. Thus a percentage of 57.1 of gangrene and 21.4 of death.

A distinction must, however, be certainly drawn between the operation of Hunter and that of Anel. I myself saw 3 cases of proximal ligature of the carotid followed by immediate cure of the aneurysm and remote spontaneous cure of the arterio-venous communication of two, while the same result was observed in some cases of brachial arterio-venous aneurysms where a proximal ligature was placed close above the sac.

These results of proximal ligature have been fully confirmed in the Manchurian campaign.

Simple Direct Ligature.

The operation of simple direct ligature may, on the other hand, be regarded as highly successful; of 31 cases of arterial aneurysm so treated and recorded in Stevenson's report all were cured.

In the Manchurian campaign Kikuzi, Alexandrow, Koratkoff, and others employed Syme's modification of the operation of Antyllus with much success. Kikuzi,[11] who calls the method "intrasaccular direct ligature," claims the following advantages for it:

1. Ease of application.
2. The short time required for its performance.
3. The practicability of performing the operation under local anaesthesia.
4. The limited extent of the vessels excluded.
5. Few collateral branches are injured, and thus circulatory disturbance and danger of gangrene is diminished.

Kikuzi employs an Esmarch's bandage in operating on the extremities, or follows Syme's method of introducing a finger into a small opening made in the sac, where the elastic tourniquet is inapplicable. He records two successful cases—one of the carotid and one of the external iliac arteries—where Syme's method was employed.

In the Manchurian campaign extirpation of the aneurysm together with the portion of the vessels from which it sprung after ligature above and below the aneurysm, was also employed. Saigo[12] reports the results of 26 aneurysms treated by this method with one death (immediately following the operation)—3.8 per cent.

Of the 26 aneurysms, 15 were arterial and 11 arterio-venous. The series was practically unaccompanied by serious gangrene, since only gangrene of the thumb in a case of axillary aneurysm and of the toes in a femoral aneurysm, 7.6 per cent., occurred (Table V).

A series of 5 cases of arterial and 9 of arterio-venous aneurysm thus treated are also recorded by L. Bornhaupt[13] in which no single accident occurred.

The procedure of extirpation, however, is a serious one, needing considerable time for its performance, and, in spite of this excellent series of results, I think the cases suitable for its employment need careful discrimination.

Let us now proceed to consider more fully the latest addition to methods of treatment.

Suture, whether lateral or circular, may well be considered the ideal procedure, since by it alone can the normal circulation be re-established and maintained, and sufficient evidence has now accumulated to allow a provisional judgement being given as to its advantages.

1. The method of suture obviates the necessity of any dependence on the establishment of a collateral route for the circulation. This, even in the healthy young men commonly the subjects of military surgery, must be regarded as an important feature, the more so that in the early stages of arterial haematomata blood extravasation may interfere with the compensatory enlargement of quite normal collateral systems.

2. By the method of suture no loss of length of the artery is suffered and the least chance of destroying any collateral branches is attained, the latter point being of some weight should the suture be followed by local thrombosis.

3. By this method not only is the immediate vitality of the limb less endangered, but the chances of permanent deficient nutrition consequent on an imperfect and insufficient blood supply are lessened or abolished.

There seems no question that the first two of these propositions must be conceded; the third needs further examination.

First, as to the immediate vitality of the limb.

It is stated that a review of published cases shows that gangrene follows the operations of ligature in from 6 to 12 per cent. of all cases. This is probably not an excessive estimate if both traumatic and spontaneous aneurysms are taken into account; but I think if the traumatic aneurysms are considered separately, and further, if the purely arterial aneurysms are considered

apart from those in which an arterio-venous communication is present, that the ligature of a healthy artery is not to be regarded as so dangerous a proceeding.

In the case of 31 direct ligations of large arteries for arterial haematoma and circumscribed aneurysm in the South African war, gangrene did not occur in a single instance; and in 30 cases of proximal ligature for the same condition only 1 case of gangrene (following ligature of the femoral) occurred (1.6 per cent.); and 1 patient di d (1.6 per cent.) from septicaemia one month after the operation, the aneurysm itself being cured.

The bad results followed the operation of proximal ligature for arterio-venous aneurysms—an operation which, except in some special instances, should never be performed.

Again, if the 26 extirpations combined with ligature by Saigo are considered, gangrene occurred in only two instances, and here was minimal in degree, resulting in the loss of a thumb after ligature of the axillary artery and of the toes in 1 case of ligature of the femoral artery.

To compare with these results, we may take first 31 cases of suture performed in civil practice, collected by Tscherniachowski,[14] including 15 isolated sutures of the artery, 7 isolated sutures of the vein, 9 sutures of artery and vein. Of the aneurysms treated, 11 were arterial, 20 arterio-venous.

Amongst these cases gangrene also occurred twice—once in a remarkable instance in which repeated secondary haemorrhages followed suture, resuture, ligature, and amputation, and in the second as the result of an infection causing gaseous cellulitis. In the matter of gangrene these statistics show a slight advantage.

In 22 cases of arterial suture collated by Subbotich during the Balkan war gangrene occurred once after lateral suture of the popliteal artery and vein, and once after circular suture of the external iliac artery combined with ligature of the vein. In a case of incipient gangrene following a wound of the popliteal artery lateral suture failed to arrest the process. If the 2 cases only are counted there is a percentage occurrence of 9 per cent.

It is obvious that these numbers are far too small for any definite deduction to be drawn, and also that they probably represent only a small proportion of the cases operated upon; but they at any rate go to prove that under existing conditions the employment of suture has not abolished the occurrence of gangrene.

Permanent Lowering of the Nutrition of Limb.

As to the question of permanent lowering of the nutrition of the limb. In civil practice, given fair condition of the blood vessels, this sequela has not been one which in the past has attracted serious attention on the part of the surgeon. In fact I think surgeons have looked upon the ligature of a large artery as a satisfactory operation in regard to its permanent results. In military practice, in my own experience, I have seen bad results; thus a condition not appreciably differing from that of Volkmann's contracture of the leg in two instances after ligature of the popliteal artery for arterial haematoma; and again, gangrene of the leg following a slight injury some months subsequently to ligature of the superficial femoral artery. In these cases, however, I think some weight must be given to the widespread nature of the blood extravasation and dissection of the limb, the unsatisfactory conditions under which the cases were treated (both the popliteal cases came from field hospitals), and perhaps to the neurasthenic state of the patients themselves.

Frisch,[15] on the examination of 10 cases in which arteries had been tied at periods of from one to eight years, found only four sound limbs; in the remaining six trophic changes were present.

Again, Koratkoff estimated the peripheral blood pressure in 17 patients in whom arteries had been tied, and found it to be—

Peripheral Blood Pressure.

In 7 cases	less than half	that of sound limb.		
In 4 ,,	about half	,,	,,	,,
In 4 ,,	more than half	,,	,,	,,
In 2 ,,	equal to that of sound limb.			

In one of the two cases the estimation was made only six weeks after the operation.

These numbers speak for themselves, but it still remains to be seen whether a series of sutures will show better results.

Thrombosis.

Intimately connected with the occurrence of gangrene is the question of how frequently thrombosis follows the operation of suture. We know from the results of experimental work that thrombosis does occur in a certain number of instances, further that its occurrence is determined by even small errors in an exacting technique.

Again, the clinical observation[16] of a firm thrombus 1½ cm. in length on the sixth day, extending from the site of a lateral wound in the femoral artery and giving rise to gangrene of the leg, is suggestive of the risk of a wound inaccurately closed. A case of spontaneous thrombosis of the femoral artery after complete division accompanied by no local blood extravasation is also recorded by Subbotich. In this incipient gangrene was noted.

A precise determination as to the sequence of thrombosis to suture of the artery in surgical practice is hardly possible, since even does the artery thrombose the patient is in no worse plight than if a ligature has been applied. The only useful indication is to be sought in the peripheral blood pressure, but of this in most cases we have only the rough estimate which can be obtained by feeling the pulsation in a distal artery. In Tscherniachowski's table of 16 lateral sutures, among 14 cases which survived the peripheral pulsation is noted as weaker in 2 cases, while in 2 weak pulsation noted before the operation became normal after the artery had been sutured. Among 9 cases of circular suture of the artery, in 2 instances no return of pulsation in the posterior tibial or dorsalis pedis followed suture of the popliteal artery, while in 1 the renewed pulsation was observed to become weaker. In 1 case of suture of the axillary and 1 of the femoral artery pulsation returned when none had existed prior to the operation. In 4 further cases where both artery and vein were joined by circular suture, in 1 case (Lexer) the peripheral pulse was noted to be weaker at the end of eight months, possibly as the result of cicatricial contraction at the site of union. In 2 out of 24 cases in Subbotich's paper the development of gangrene points to the occurrence of thrombosis of the artery.

Other Accidents.

Lastly, we have to consider how far the practice of suture is exempt from the other accidents which sometimes follow upon operations on the arteries. Unfortunately, not very much information is to hand on this subject. The mere failure to be able to apply the method either from the discovery of a defect too extensive to allow of repair, or from technical difficulties dependent upon the position of the wound, is of little moment since the exploratory operation may equally well be followed by ligation of the vessel.

The more serious question of failure in competency of the suture itself either from primary insufficiency of the stitch or from secondary infection is more important. Among the cases collated by Tscherniachowski no such accidents are recorded, but even here the fallacy depending on the fact that unsuccessful operations are not freely published must be given due weight. Z. von Manteuffel records a case in which a lateral suture applied to the femoral artery on the sixth day leaked, and had to be supplemented by a double ligature, and here one may emphasize the fact that von Manteuffel himself has questioned the suitability of recent wounds to primary suture by reason of their contused nature. Again Subbotich, while he records the fact that secondary haemorrhage followed none of the 22 operations performed in the Belgrade Hospital, adds, in speaking of arterial haematoma: "The haematoma must be removed, the bleeding vessels dealt with, and the cavity drained after complete closure by suture of the incision wound by other openings specially made for the purpose. In these cases secondary haemorrhage may occur after several days and be very serious."

Comparative Results in 41 Cases of Ligature and 24 Cases of Suture in the Belgrade State Hospital.

Ligature	...	...	...	41 cases.
Gangrene	...	...	...	6 cases, = 14.6 %
Deaths ...	...	...	...	4 cases, = 9.75 %

One death due to softening of the brain and pneumonia after ligature of the carotid; 1 from secondary haemorrhage; 1 from sepsis; 1 from anaemia and exhaustion.

Suture	24 cases.	
Gangrene	3 cases,	= 12.5 %
Deaths	2 cases,	= 8.3 %

These figures, while exhibiting no very striking superiority for the new method in immediate results, at least thoroughly justify its employment, and this justification may be strengthened in the future if it can be shown that the permanent result is better in regard to the condition of the limb. On this latter point I can only quote again Subbotich:

> On seeing some months later cases that have been operated upon, we find *both* in cases of ligation and of suture greater or less interference with the functions, such as muscular weakness, neurasthenia, oedema, etc. On the other hand, we find some quite ideal cases.

Conclusions.

What conclusions are we to draw from these results?

Operations for wounds of the arteries may have to be undertaken during three distinct periods, which may be classed as primary, intermediate, and secondary.

Primary Haemorrhage.

The operation of choice for primary haemorrhage from a gunshot wound in the field is direct ligature. In support of this opinion may be advanced the comparative simplicity of the operation and its applicability even under adverse conditions. Primary ligation should be confined to cases in which haemorrhage is obviously endangering life.

The objections to the method of suture are twofold: First, the local conditions are not favourable in consequence of the contused and tattered margins of the opening in the artery commonly met with. The anatomical character of the wound, in fact, is unfavourable both to the safe closure of the wound, and to the avoidance of subsequent thrombosis in consequence of the impracticability of ensuring an accurate apposition of the intima. One has only to consider the fact that the comparatively slight damage attendant upon the use of toothed forceps to facilitate the introduction of the suture is generally considered enough to risk subsequent obliteration of the vessel by thrombosis, to come to the conclusion that the ragged contused margins of a gunshot wound are ill suited to suture. Secondly, although these difficulties are to be avoided in certain cases by excision of the damaged portion of the vessel and circular suture of the proximal and distal ends, yet this undertaking needs so much time, skill, and perfection in the general surroundings that it cannot be regarded as a practical procedure.

In this stage there is no doubt that a line must be drawn between the wounds of civil practice in which suture may be advisable and the wounds produced by bullets of small calibre.

When primary operations are necessary and the wounded artery is dealt with during the first three days the difficulty of evacuating the clot may not be great, while the procedure saves much time, and the general nutrition of the limb suffers less than if a secondary operation is waited for. Further, where incipient gangrene threatens, the limb may be rescued by relieving the collateral circulation from the pressure exerted by the haematoma. The latter fact is especially to be borne in mind in the case of popliteal haematomata (Z. von Manteuffel).

Intermediate Operations.

It has already been pointed out that the wounds are ill suited to any form of treatment except the simplest. The evacuation of clot is difficult, the stiff oedema of the arterial wall itself, as well as that of the boundaries of the cavity (Brentano), and the probability of the necessity of providing drainage, negative the chances of a successful suture, and render the prognosis even of a simple direct suture doubtful.

The experience of all recent campaigns has been to show that, in the absence of secondary haemorrhage or rapid extension of the haematoma, the general tendency is towards contraction and localization of the extravasated blood and to diminution in the size of the arterial wound, while the conditions improve for the successful application of treatment.

The unsuitable character of these injuries at this stage for the employment of proximal ligation at the seat of election has already been dwelt upon. It is unsafe, not only from the risk of further secondary haemorrhage, but also because, being done at a period when the conditions for the establishment of an efficient collateral circulation are bad, gangrene is frequent. This has been a common result in the limbs, and no more striking example could be given than that of a surgeon in the Manchurian campaign, who saw cerebral softening follow three times consecutively after ligaturing the common carotid in healthy young soldiers.

Secondary Operations.

These may be undertaken at an average period of about four weeks, and practically resolve themselves into operations for aneurysms of three varieties.

Each of the five methods of treatment may offer advantages under certain conditions which may be shortly stated:

(*a*) *Simple Ligature.*—Simple proximal ligature as near the aneurysmal sac as practicable has shown itself a satisfactory method of treatment for traumatic arterial aneurysms. Under certain circumstances it is likely to be still employed, either in dealing with small aneurysms, or in situations where direct treatment may necessitate a prolonged and serious operation, as in the case of the carotid artery, especially when the conditions under which the operation has to be performed are not good.

(*b*) *Proximal and Distal Ligature, either of the Artery alone or of both Artery and Vein.*—This method is suitable to the treatment of either arterial or arterio-venous aneurysms. Ligature of the artery alone is unsuitable to arterio-venous aneurysms or varices where there is any likelihood of the sac being in part fed by a collateral branch. If such a branch does exist, the thrill of the varix will continue, and this, though not a serious accident, is yet undesirable. The addition of double ligature of the vein has not proved disadvantageous.

(*c*) *Syme's Modification of Antyllus's Operation.*—The intrasaccular direct ligature of Kikuzi. This method is applicable especially to large arterial haematomata, but also to recent arterio-venous aneurysms in some instances. The short length of the artery included between the ligatures, the limited amount of dissection needed to expose the vessel, and the fact that in the limbs the operation may often be performed while the circulation is controlled by an Esmarch tourniquet are manifest advantages. Moreover, the danger of overlooking the presence of small branches feeding the sac is avoided, and mere evacuation of the clot is substituted for the troublesome dissection required if the sac is to be extirpated. This method has much to recommend it as an operation in military surgery.

(*d*) *Extirpation of the Sac with limited Excision of the Vessels in communication with it.*—This method is applicable to the case of all aneurysms of whatever variety, where the occlusion of the vessel is not of appreciable importance to the general nutrition of the limb, practically, therefore, to any vessels below the brachial in the upper and the popliteal in the lower extremity. It has proved itself a highly successful procedure elsewhere, but it necessitates an often prolonged and difficult dissection, and offers no material advantage over the last operation.

(*e*) *Suture of the Wounded Vessel, with or without Extirpation of the Sac.*—The relative advantages to be obtained by this method have been already discussed. If successful the result is ideal; it has not been shown to be attended by any accident to which other procedures are not liable, while even if thrombosis occurs and robs the operation of its crucial advantage, the patient is not worse off than if ligature had been performed. Theoretically its applicability to the treatment of any of the forms of aneurysm is limited only by a lesion the situation or the extent of which prevents accurate and secure apposition, and even this difficulty is to be overcome by the insertion of an autoplastic graft from a neighbouring vein. Again, in certain situations, such as the neck, it obviates a risk of irrecoverable damage to the brain. Practically, however, the necessity of an aseptic field of operation, the existence of perfect operative surroundings, and a really high standard of manipulative skill on the part of the surgeon, must at present considerably limit its adoption in the routine of military surgery.

If adopted, the operative technique devised by Carrel appears to offer the best chance of success. In old-standing cases of traumatic arterio-venous aneurysms, or aneurysmal varices Matas's arteriorrhaphy or the Matas-Bickham operation may be adopted.

A consideration of the wounds of arteries by bullets of small calibre and their treatment shows that progress in this branch of military surgery has taken the direction of increased conservatism and expectancy. In this it is no exception to that observed in every other chapter of the subject. Non-interference in fractures has become almost the general rule, operations on joints have decreased in number almost to a vanishing point, injuries to the nerves are seldom the subjects of primary treatment, and we have seen that those of the vessels come into the same category. Still more striking is the expectant attitude maintained by the surgeon in the case of wounds traversing the great body cavities, in all of which primary operations have become progressively fewer.

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TYPHOID-PARATYPHOID VACCINATION WITH MIXED VACCINES.

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CONSIDERING the fairly frequent occurrence of paratyphoid A and paratyphoid B in tropical regions, at least in Ceylon and India, I have for several years advocated the use of a mixed vaccine, namely, typhoid + paratyphoid A + paratyphoid B, instead of the usual simple typhoid vaccine.[1]

My belief in the possibility of producing an efficient mixed vaccine was based on the experiments I carried out in Bonn, working under Professor Kruse during 1901 and 1902. I demonstrated then[2] that by inoculating an animal with two different bacteria at the same time, the blood produced agglutinins and immune bodies for both, and that provided a sufficient minimum quantity had been inoculated, the amount of agglutinins and immune bodies for each germ was about the same as in the animals inoculated with one germ only. I demonstrated that even inoculating a rabbit with three different micro-organisms (*B. typhosus* + *B. pseudo-dysentericus*, No. 1 (Kruse) + strain of *B. coli communis*), the amount of agglutinins and protective bodies elaborated for each germ was nearly the same as in animals respectively inoculated with one germ only. During the course of these experiments I was able to confirm the fact that when the immunization is obtained by a single inoculation, provided the minimum dose sufficient to obtain the maximum immunization be given, the amount of agglutinins and immune bodies elaborated by the inoculated animals is not in proportion to the amount of cultures injected. A series of rabbits inoculated with 2 c.cm. of typhoid cultures will give the same average agglutination limit and the same amount of immune bodies as a series of rabbits inoculated with 4 c.cm.

Since 1905 I have experimented with several mixed vaccines in man, of which the principal are (1) a typhoid + paratyphoid A + paratyphoid B vaccine, and (2) a typhoid + dysentery (Kruse-Shiga) + dysentery (Flexner) vaccine. I will limit my remarks to (1), but I may be allowed to note that anyone wishing to experiment with mixed dysentery vaccines should be careful always to use peptone-water cultures, as broth cultures of dysentery give rise to an extremely painful infiltration at the point of inoculation.

Method of Preparation of the Mixed Typhoid-Paratyphoid Vaccine.

The mixed vaccines as prepared by me are either dead vaccines, the cultures being killed in the usual way by heating at 53° C., or live attenuated vaccines got by heating the cultures at 50° C., for an hour. During recent years I have used rather extensively both the dead mixed vaccine and the live attenuated one.

At first I used to prepare the vaccine in the following manner: Several tubes containing 10 c.cm. of broth each were inoculated with two loopfuls of an agar culture of typhoid forty-eight hours old, other tubes with two loopfuls of paratyphoid B, and others with two loopfuls of paratyphoid A. All the strains I used were non-virulent but rich in antigen, as shown by animal experiments. The inoculated tubes were kept for twenty-four hours in the incubator at 35° C. These cultures were then heated in a water bath at 55° C. (dead vaccine) or 50° C. (live attenuated vaccine) for an hour; they were then mixed together in certain proportions in sterile Petri dishes—two tubes (20 c.cm.) of typhoid, one tube (10 c.cm.) of paratyphoid B, and one tube (10 c.cm.) of paratyphoid A. The mixed vaccine consisted, then, of two parts typhoid, one part paratyphoid A, and one part paratyphoid B. I used to give 10 minims of the mixed vaccine at the first inoculation, and 20 or more at the second and third. At the present time the vaccine is standardized by counting the germs before mixing. The mixed vaccine I use at the present time contains per cubic centimetre 500 million typhoid, 250 million paratyphoid B, and 250 million paratyphoid A, and is prepared either from broth cultures or emulsions in physiological salt solution. A little lysol (0.2 per cent.) is added.

Dose and Method of Vaccination.

As already stated, the mixed vaccine I now use—either the dead one obtained by heating cultures at 53° C. or the attenuated live one prepared by heating cultures at 50° C. for an hour—contains per cubic centimetre 500 million typhoid, 250 million paratyphoid A, and 250 million paratyphoid B. I give 0.6 c.cm. the first time, and double the dose a week later, and, whenever possible, a third dose two weeks from the first. In some cases, however, I give only ½ c.cm. the first time, and 1 c.cm. the second. Very thin, delicate individuals and young women receive a little less. Children between 8 and 15 get a quarter to half the adult dose. The inoculation of the mixed vaccine is followed by a local and general reaction which, as a rule, is not distinctly severer than after the inoculation of simple typhoid vaccine. Three or four hours after inoculation the region on the arm where the injection has been made becomes painful and red, and fever may supervene, which does not last longer, as a rule, than twenty-four to thirty-six hours, and does not in most cases incapacitate one for work.

As I do not believe that the immunization given by bacterial inoculation lasts in man very long, I generally advise people to be vaccinated once every two years, or even once a year.

Innocuity of the Mixed Typhoid-Paratyphoid Vaccine.

The mixed vaccine, either the dead one or the attenuated live one, is innocuous, as proved by several thousand inoculations done to date in Ceylon. Professor Browning, the Director of the Ceylon Government Chemical Institute, has to date received 35 inoculations of mixed live vaccine at one or two weeks' intervals, in addition to 29 inoculations of simple typhoid live vaccine. He has always remained in very good health.

Remarks on the Immunization Obtained in Man by the Mixed Vaccine.

Lack of time prevented my studying the amount of all protective substances produced in inoculated individuals; the investigation, therefore, has been limited to studying comparatively the amount of agglutinins produced in some individuals inoculated with mixed and simple vaccines.

Two natives, D. and F., were inoculated with mixed (dead) vaccine, 0.6 c.cm. the first time; 1.2 c.cm. after a week.

One native, P., was inoculated with simple typhoid vaccine (dead), 0.6 c.cm. the first time; 1.2 c.cm. after a week.

One native, S., was inoculated with simple paratyphoid A vaccine (dead), 0.6 c.cm. the first time; 1.2 c.cm. after a week.

One native, A., was inoculated with simple paratyphoid B vaccine (dead), 0.6 c.cm. the first time; 1.2 c.cm. after a week.

Two natives, A. E. de S. and D. G., were inoculated with 0.6 c.cm. mixed *live* (attenuated) vaccine, and with 1.2 c.cm. after a week.

Initials.	Vaccine.	Limits of Agglutination.	Weeks after First Agglutination.											
			1	2	3	4	5	6	7	8	9	11	13	15
D.	Mixed, dead	*B. typhosus*	0	1/400	1/200	1/200	1/300	1/80	1/80	1/80	1/60	1/40	1/20	1/20
		B. paratyphosus A	0	1/60	1/60	1/60	1/100	1/60	1/80	1/60	1/60	1/60	1/20	1/20
		B paratyphosus B	0	1/20	1/40	1/20	1/60	1/20	1/20	1/20	1/20	1/20	1/20	1/20
F.	Mixed, dead	*B. typhosus*	0	1/300	1/200	1/200	1/300	1/300	1/100	1/80	1/80	1/40	1/20	1/20
		B. paratyphosus A	0	1/60	1/60	1/40	1/60	1/80	1/80	1/80	1/80	1/40	1/20	1/20
		B. paratyphosus B	0	1/40	1/60	1/60	1/60	1/80	1/40	1/40	1/40	1/20	1/20	1/40
P.	Typhoid, dead ...	*B. typhosus*	1/20	1/500	1/300	1/200	1/300	1/150	1/150	1/150	1/150	1/60	1/20	0
		B. paratyphosus A	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus B	0	0	0	0	0	0	0	0	0	0	0	0
S.	Paratyphoid A, dead	*B. typhosus*	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus A	1/20	1/80	1/20	1/40	1/60	1/80	1/60	1/60	1/40	1/40	1/20	0
		B. paratyphosus B	0	0	0	0	0	0	0	0	0	0	0	0
A.	Paratyphoid B, dead	*B. typhosus*	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus A	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus B	0	1/80	1/60	1/60	1/80	1/60	1/20	1/20	1/20	1/20	0	1/20
A. E. de S.	Mixed, live	*B. typhosus*	1/20	1/300	1/500	1/200	1/200	1/100	1/100	1/80	1/60	1/20	1/20	0
		B. paratyphosus A	0	1/40	1/40	1/20	1/40	1/20	1/20	1/20	1/20	1/20	0	0
		B. paratyphosus B	0	1/40	1/40	1/20	1/40	1/20	0	0	0	0	0	0
D. G. ...	Mixed, live	*B. typhosus*	0	1/500	1/300	1/200	1/200	1/100	—	—	—	—	1/60	1/20
		B. paratyphosus A	0	1/60	1/40	1/40	1/40	1/40	—	—	—	—	1/40	1/20
		B. paratyphosus B	0	1/20	1/60	1/60	1/60	1/20	—	—	—	—	1/40	1/20
I.	Typhoid, live	*B. typhosus*	0	1/400	1/300	1/300	1/300	1/300	1/300	1/200	1/200	1/300	1/100	1/80
		B. paratyphosus A	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus B	0	0	0	0	0	0	0	0	0	0	0	0
W.	Paratyphoid A live	*B. typhosus*	0	0	0	0	0	0	0	0	0	0	0	0
		B. paratyphosus A	0	1/100	1/80	1/60	1/60	1/80	1/80	1/60	1/60	1/60	1/60	1/60
		B. paratyphosus B	0	0	0	0	0	0	0	0	0	0	0	0
K.	Paratyphoid B, live	*B. typhosus*	0	0	0	0	0	0	0	0	0	0	0	—
		B. paratyphosus A	0	0	0	0	0	0	0	0	0	0	0	—
		B. paratyphosus B	0	1/20	1/80	1/80	1/60	1/20	1/20	1/20	0	0	0	—

One native, I., was inoculated with 0.6 c.cm. live (attenuated) typhoid vaccine, and with 1.2 c.cm. after a week.

One native, K., was inoculated with 0.6 c.cm. live (attenuated) paratyphoid B vaccine, and with 1.2 c.cm. after a week.

All the inoculated persons were healthy young natives who volunteered for the experiment. They were inoculated on the same days, the first inoculation taking place on June 14th, 1913, and the second on June 21st. The blood of all the inoculated persons was investigated for the presence of agg utinins regularly once a week, and the results are collected in the accompanying table, for the compilation of which I am indebted to Mr. Burgess.

From the table it will be seen that the agglutinins seldom appear before the seventh day, and that individuals inoculated with a mixed typhoid+paratyphoid A +paratyphoid B vaccine produced agglutinins for all three germs, and that on the average the amount of agglutinins produced for each germ was not much smaller than in individuals inoculated with one germ only, although the latter had a much larger dose of the germ. As regards the length of time during which the agglutinins were present in the inoculated individuals, the results did not differ much; if anything, they were rather in favour of the mixed vaccines. Although, of course, one cannot gauge the actual immunization obtained by simply studying the agglutination, there can be no doubt that to a certain extent agglutination is a rough index for immunization.

It seems to me that these results are decidedly in favour of the advisability of using a mixed typhoid+ paratyphoid A+paratyphoid B vaccine in countries where all three diseases are met with.

Conclusions.

1. The use of the mixed typhoid + paratyphoid A + paratyphoid B vaccine, either the dead or the live (attenuated) one, is harmless. As there is such a general objection to the use of live vaccines, I now recommend for routine use the mixed dead vaccine, which consists of an emulsion of typhoid and paratyphoid A and B bacilli, killed by heat (53° C.) and standardized, so that 1 c.cm. contains approximately 500 million typhoid bacilli and 250 million each of paratyphoid A and B.

2. The inoculation of such vaccine to human beings in the doses mentioned in this paper—namely, 0.6 c.cm.. or about 10 minims, the first time, and 1.2 c.cm., or about 20 minims, the second—induces a production of agglutinins for all three germs: *B. typhosus*, *B. paratyphosus* A, and *B. paratyphosus* B. The amount of agglutinins elaborated for each germ seems to be practically the same as in individuals respectively inoculated with typhoid vaccine only, paratyphoid B vaccine only, paratyphoid A vaccine only.

3. In countries where, besides typhoid, there occur paratyphoid A and paratyphoid B, a mixed vaccine should, in my opinion, be used instead of the simple typhoid vaccine This has been done in Ceylon for the last five years with good results.

I desire to express my indebtedness to Mr. Burgess Assistant Bacteriologist, for the very valuable assistance rendered.

REFERENCES.

[1] Notes on the subject of mixed vaccines may be found in my earlier publications in the *Centr. für Bakteriologie* (1909) and in the *Transactions* of the Bombay Medical Congress (1909), in the Ceylon Medical Reports, and in various recent publications. [2] *Zeit. für Hygiene*, 1902.

TYPHOID CHOLECYSTITIS.

BY

ALBERT E. MORISON, F.R.C.S.EDIN.,

SUNDERLAND.

IT has been known for a long time that the gall bladder is a common focus of infection in so-called typhoid carriers, and the presence of the *B. typhosus* has been demonstrated in this viscus seventeen years after exposure to typhoid infection. It has also been shown that the *B. typhosus* is found in the gall bladder in many cases of gall stone. In a large proportion of cases in which death has occurred from typhoid fever the organism has been found in bile taken from the gall bladder. During epidemics of typhoid fever, so-called "relapses," with abdominal symptoms and prolonged illness, have been shown to be due to infection of the gall bladder by this organism. Even in patients who are not known to be suffering from typhoid but are under observation for some other ailment, the correct diagnosis may only be made by the discovery of a positive Widal's reaction. The symptoms do not always refer to the gall bladder, but careful examination will not often

fail to discover cholecystitis. The chief symptoms are a feeling of malaise and sickness, with a slight evening rise of temperature (99.5° to 101°), and occasional attacks of pain accompanied by rigidity of the abdominal muscles, not always localized to any special area in the abdomen. These attacks, if severe, recur with regularity every third or fourth day, are accompanied by vomiting and rise in temperature, and are followed as the temperature subsides by heavy night sweats. If during the attack or after the acute pain has passed away muscular rigidity is not pronounced, the gall bladder, sensitive to touch and more or less distended, can be felt. During the late South African war I saw many cases of obscure abdominal disease in men who had been exposed, as most of us were, to typhoid infection, in whom there was no suspicion of typhoid, but who presented symptoms such as these, and whose cases were diagnosed as appendicitis, renal calculus, gall stones, perforation of the intestine, etc. The following is an example:

CASE I.

During the height of the enteric epidemic among the troops in and around Bloemfontein an officer, aged 36, came under my care suffering from dysentery. He recovered slowly from this, and at the end of six weeks returned to duty, but never regained his full vigour and health. He again came under my care six months later, complaining of recurrent attacks of severe pain in the right hypochondrium. These came on every third or fourth day, were ushered in by a rigor and sickness, and the temperature rose to 102° to 103°. There was never jaundice. During each attack the gall bladder was very tender and could be distinctly felt. As the attack subsided the gall bladder became less evident, and profuse night sweats occurred. The blood gave a positive Widal's reaction. Under treatment the attacks of pain became less frequent and less severe, and after an illness of three months the patient was invalided home. His subsequent history is interesting. For two years he had attacks of a similar nature, but recurring at longer intervals and not so severe, but it was not until four years had elapsed that examination of the blood proved negative and that he became entirely free from his old symptoms.

I have recently seen two cases of a similar nature. They were of a less severe type, and occurred in patients one of whom was convalescing from typhoid fever, whilst the other, although exposed to infection, had shown no symptoms of the disease.

CASE II.

A. B., aged 19, seen with Dr. Muir, of Horden, was recovering from a mild attack of typhoid fever, but at the end of six weeks was still complaining of great weakness, night sweats, want of appetite, and the night temperature was about 100.5°. Nothing abnormal could be detected in the chest, the bowels were regular, and the urine healthy. On palpating the abdomen, as soon as my hand was passed into the right hypochondrium he winced and complained of tenderness. The fundus of the gall bladder could be felt and was sensitive to touch. A diagnosis of typhoid cholecystitis was made, and the treatment suggested was large quantities of liquid and 15 grain doses of sodium salicylate every four hours. The patient rapidly recovered and was able to return to work in the pit at the end of six weeks. He has remained well since.

CASE III.

This patient, seen in consultation on January 12th, 1912, was a woman aged 26, who had been confined six weeks previously of her second child. Labour was easy, but at the end of six weeks she was still confined to bed with malaise, night sweats, and occasional twinges of pain in "the pit of the stomach." The evening temperature varied between 99° and 100°. Three months previously she had been nursing a relative suffering from typhoid fever. Examination of the chest revealed nothing abnormal; the abdomen was flaccid and readily palpable until my hand was passed into the right hypochondrium, when on deep pressure she winced and exclaimed, "That's it." The fundus of the gall bladder could easily be felt, and this was the tender spot. Examination of the blood showed a positive Widal's reaction. The treatment adopted was similar to that in the previous case, and under it she rapidly improved till, at the end of a month, she was quite recovered, and has since continued to be in good health.

The next case I have to record is even more interesting. In it no history of exposure to typhoid infection could be elicited, but the symptoms were more severe and localized to the abdomen.

CASE IV.

E. G., aged 20, was suddenly seized while in bed on October 28th, 1911, with very severe pain in the right side. Except for occasional headaches, she had been in her usual health prior to this date. She vomited, but this brought no relief. A doctor diagnosed appendicitis and sent her into Monkwearmouth Hospital. The attack gradually passed off, but returned with similar symptoms, and as severely, in a few days. The temperature was above normal after each attack. During the paroxysms of pain vomiting was frequent, and the whole abdomen was rigid and tender. On November 9th Dr. Bruce found a positive Widal's reaction present, and sent her as a case of typhoid fever to the Borough Sanatorium next day. On admission the temperature was 93.6° F., and the pulse 98. On the evening of November 11th she was again seized with pain, and the temperature rose to 99.6°, and the pulse was 90. On November 14th a more severe attack occurred; she vomited profusely, and the abdomen was then very tender and rigid all over; the temperature was 100.6°, and the pulse 120. This attack lasted for two days; the pain then gradually subsided, the symptoms disappeared, and she was able to take a little nourishment. On the morning of November 18th another attack came on, the most severe she had had, and Dr. Renney asked me to see her. I found her in great pain, vomiting everything taken, temperature 99.4° F., pulse 116. Her abdomen was so tender and hard that nothing could be felt, but she had not the very ill appearance of a case of peritonitis due to perforation. She was removed the same day to the Royal Infirmary, and after poulticing the abdomen and administering hot saline enemata the pain gradually subsided, and on November 19th she was able to retain a little liquid nourishment. At 4 a.m. on November 21st I was sent for to operate. She was vomiting everything, the temperature was 101.4° F., the pulse 120, and the abdomen again rigid. Next day she had again recovered, and as the abdominal muscles were now flaccid my first opportunity of examining her satisfactorily came. As soon as her right side was palpated the muscles became rigid, but on deep pressure the fundus of the gall bladder could be felt very tender and distended. After this attack she was slightly jaundiced and bile appeared in the urine. She was treated with an effervescing mixture containing sodium salicylate. A much slighter attack came on on the evening of November 24th, sickness returned, the temperature was 99° F., and the pulse 120, but the symptoms rapidly passed off, and no further attack occurred. She was discharged from the infirmary on December 11th, and her doctor informs me she has since remained quite well.

These cases are of interest because I hope they will draw attention to a source of infection and a course of illness not generally recognized.

It is now generally believed that the cause of gall stones is an infective inflammation of the mucous lining of the gall bladder with the production of cholesterin and that without a previous cholecystitis no cholelithiasis occurs. Also that organisms frequently form the nucleus of gall stones and when the inflammation of the gall bladder has subsided, the gall stones may remain quiescent unless some fresh infection occurs which lights up inflammation again. A tender and sensitive condition of the mucosa results and this causes expulsive efforts on the part of the muscular coats with painful spasms.

It is not so generally known that inflammation of the gall bladder without stones may produce the same symptoms and signs. It is important to bear in mind, as Case IV proves, that there may be no history of typhoid fever, no record of any exposure to infection, and yet typhoid cholecystitis may be the cause of a serious illness. It is also important to remember that the illness may be not only a source of danger to the patient, but that as typhoid carriers these people may be a menace to the community for several years. Unfortunately in many of them a definite clinical diagnosis cannot be arrived at, because Widal's reaction may be negative, and the cause of the cholecystitis can only be cleared up by operation and subsequent bacteriological examination. The condition has been diagnosed as gall stones, but on opening the gall bladder none are found, only an inflamed mucosa. Simple drainage (cholecystostomy) does not always cure; after it the symptoms subside for a time, but the drainage wound closes, attacks recur, and the only effectual cure may be removal of the gall bladder.

Puncture of the distended gall bladder with an exploring needle in these cases is a risky procedure. After the needle has been withdrawn leakage from the viscus may occur, and I can recall an instance of a patient who nearly died in my consulting-room of shock from this cause.

Medical treatment is simple, efficacious, and as a rule I have found it to act speedily. Large doses of sodium salicylate (15 to 30 grains) in an effervescing mixture until its physiological effect is produced, and abundant drinks, quickly cause disappearance of the symptoms, and recurrence is rare. The drug should be continued in smaller doses for a month after convalescence seems to be assured.

THE Congress of the United States has under consideration a bill providing for the allocation of a sum of £60,000 for the building of a Government hospital at Spartanburg for the treatment of pellagra.

A CASE OF HYSTERICAL MONOPLEGIA FOLLOWING ELECTRIC SHOCK.*

BY PURVES STEWART, M.D., F.R.C.P.,
PHYSICIAN TO WESTMINSTER HOSPITAL.

A CARPENTER, aged 21, was screwing on an electric-light bulb when an explosion occurred, apparently owing to short-circuiting of the current, and he was flung back across the workshop. The glass globe burst and cut the palm of his hand, which, however, did not bleed. He states that the skin of the hand became curiously dry, and that the fingers and thumb remained stiffly contracted in the posture of grasping the glass bulb. He did not become unconscious. In the course of a week or so this posture of the hand gradually changed, and the fingers, wrist, and elbow became rigidly flexed and immobile. At first there was no loss of sensation. Jerkings then supervened in the paralysed limb. Seven weeks after the accident the contractured limb was straightened under an anaesthetic, and was put up in splints and plaster-of-Paris. The jerkings ceased, but the fingers gradually became flexed again, in spite of the splints. A second anaesthetic was given and the limb was manipulated, after which it became flaccid at all joints, with loss of sensation as high as the elbow, observed by the patient himself. This loss of sensation subsequently advanced as high as the shoulder.

Eight months after the accident the patient had two attacks of "electric" jerkings of all his limbs, except the left arm, with alleged unconsciousness, lasting three or four hours; this was followed by difficulty in walking, lasting about two weeks, during which he shuffled and required the support of a stick.

On physical examination about ten months after the accident he was seen to be a tall muscular young man, in whom the left upper limb dangled helpless and flail-like by his side. There was a total cutaneous anaesthesia and analgesia of the limb, up to the level of the shoulder-joint, bounded by a sharp "amputation-line." Joint-sense was lost in all the joints of the left upper limb. There was no voluntary movement in any muscle of the fingers, wrist, elbow, or shoulder, nor in the trapezius or scapular muscles. The left pectoral occasionally contracted synergically with the right. The sterno-mastoids contracted normally and equally. The latissimus dorsi, although totally paralysed to voluntary movement, contracted briskly on coughing. Pins could be passed through the anaesthetic skin without producing bleeding. All the muscles of the affected limb reacted normally, both to faradism and galvanism. The supinator-jerks, knee jerks, and ankle-jerks were normal and equal. The optic discs, pupils, and cranial nerves were normal. Apart from the left upper limb, the sensory and motor functions were everywhere normal. During sleep the limb remained flaccid, and the patient was not awakened by stimuli applied to it.

The case is a typical example of hysterical paralysis in which the exciting psychical trauma was an electric shock. There is no evidence of a sexual element in the case, although a Freudian may urge that psycho-analysis has not yet been tried. Another point of interest is that the anaesthesia was not suggested by the various physicians whom the patient consulted, but was observed by the patient himself. Since admission to hospital a month ago, he has been treated by suggestion, but without result, so far. Hypnotism has not yet been tried.

* Read before the Section of Neurology of the Royal Society of Medicine.

THE honour of Senator of the Kingdom of Italy has been conferred on Professors Ettore Marchiafava, director of the Anatomical Institute of the University of Rome; Carlo Forlanini, head of the medical clinic of the University of Pavia; and Carlo Gatti, a distinguished surgeon of Turin.

AN institute of hydrology has been attached to the Collège de France. It comprises four laboratories—namely, Physics, of which the director is Professor d'Arsonval; hygiene, of which M. Bordas is the head; analytical chemistry, under the direction of M. Urbain, and physical chemistry, under the direction of M. Monreu.

A CASE OF GASTRIC TETANY: RECOVERY.

BY W. T. MILLS, L.R.C.P. AND S.I.,
RHODE, KING'S COUNTY.

THE article on gastric tetany in the adult by Dr. W. R. Irwin, in the JOURNAL of November 8th, has induced me to publish a hitherto unreported case of recovery from this interesting and very fatal disease.

Mrs. M., aged 51, suffered from stomach trouble for eight or ten years before this attack, her symptoms being loss of appetite irregular vomiting, pain, and constipation; and I learnt that she had a severe attack of haematemesis two years previously.

On March 11th, 1905, about midnight, she experienced tingling (pins and needles) in the hands and arms, the feet and legs, and in the face; after that the characteristic spasms of tetany came on in the same parts. I saw her on the morning of March 12th, when tetany was well marked: the pulse was very feeble, there was profound collapse, and she exhibited the utmost terror. The stomach was greatly dilated, in fact, it filled the whole abdominal cavity, and was full of liquid—splashing could be heard at a distance from the bedside. I gave her a hypodermic of morphine ¼ grain, pilocarpine ⅛ grain immediately, and within half an hour she was much better and easier. I ordered a mixture of cascara, concentrated solution of senna, and tincture of jalap every three hours until the bowels were freely moved. I forbade anything to be given by the mouth, either liquid or solid, until the bowels had acted well, and the liquid had left her stomach; after that I ordered meat juice alone.

She did well, and on March 18th was up and downstairs. On March 20th she had not vomited since her attack; but the skin on the forehead and chest and over the flexor aspect of the elbows was copper or deep golden colour (the sclerotics were quite clear). The discoloration of skin extended and persisted for about fourteen months. The stomach remained greatly dilated, and I formed the opinion that the only cure for her was gastro-enterostomy. I urged operation very strongly, and pointed out to her all the advantages of surgical interference; but she refused, and said she would not be able to stand any operation.

At this time she was a perfect skeleton, owing to starvation and malnutrition, with copper-coloured skin, and with the most ghastly appearance imaginable. However, she improved on treatment; her diet consisted of meat juice and a poached egg, anything else caused vomiting.

She went through a period of great suffering until the following year, 1906, when she became amenable to operation, and gastro-jejunostomy was performed, and after that pylorectomy on account of a mass around the pylorus, which proved to be inflammatory and not malignant. After the operation she improved every day, gained in weight and strength, partook of all kinds of food without distress or discomfort, and lost the discoloration of the skin, and was able to attend to all her household duties, which were very laborious. She passed through a severe attack of pneumonia in February, 1912, and is now better and stronger than she has been during the past twenty or twenty-five years.

The treatment of tetany, in my opinion, is—first, to cure spasms and so relieve pain, collapse, and fear; secondly, to empty the stomach. For the former one hypodermic of morphine and pilocarpine proved most successful, and for the latter I relied on a mixture of purgatives, with absolute rest to the stomach.

The plan of passing a tube for the relief of a markedly dilated and overloaded stomach I consider a critical procedure, when we take into account the profound collapse and abject terror of the patient; but the treatment of pouring pint after pint of mustard and water, or any other liquid into a stomach under these conditions with the hope that this overdistended, weak, and poisoned viscus will empty itself by such means, to me appears sheer madness, for it only increases the trouble, adds fuel to the fire, and kills the patient.

A CASE OF THE SO-CALLED RAT-BITE DISEASE.

BY
MITCHELL INNES DICK, M.B., CH.B.,
AND
W. J. RUTHERFURD, M.D.

FEW cases have been recorded in Britain of the condition known as rat-bite disease, and only 49 cases in Japan in the last thirteen years. If it is possible, as the following would seem to suggest, for the quite definite condition going by that name to be acquired apart from any actual bite by a rat, it seems to us that it might be more advisable even to call the condition by its somewhat barbarously-sounding Japanese name of

Sokodu, rather than to apply to it a name carrying a suggestion as to etiology which is not necessarily correct. Not only so, but the name "rat-bite disease" in not sufficiently exclusive; even the synonym "rat-bite fever" would be preferable so far as that goes. Other diseases can be conveyed by rat-bites, notably the septic conditions, and the tuberculides. Last year (1912) one of us had under treatment a boy who had an ulcerating cutaneous tuberculosis on the back of one of the fingers of his left hand. One day, some three months earlier in the year, he had been engaged with a number of companions in ratting along the bank of a small stream that received the sewage from several groups of country cottages. They disturbed a rat, and stoned it till it seemed to be dead. When picked up, however, it had sufficient vitality left to turn upon the hand of the boy who had seized it, inflicting a not very severe skin wound with its teeth. The wound healed slowly, and was not thought important, but after a little it broke down again, spreading superficially and ulcerating through the whole thickness of the cutis vera as a lupus exedens.

R. P., aged 33 years, after a day's work during which he had no feeling of being in other than his usual health, was seized about 7 p.m. with slight pain in the splenic region. Shortly thereafter he had a rigor, and about three hours later sweated profusely. This occurred during the first week of last July.

After eight days of fair health—that is, nine days after the first—he had a similar attack, and seven days afterwards, on July 20th, still another, during which he was seen by one of us. His clothing was then wringing with sweat, his tongue was furred, the pulse was 120, and the temperature 100.4° F., though as he had by this time reached the sweating stage he was probably defervescing, and it had doubtless been much higher. The next day he seemed quite well again, except that the tongue was still furred.

Five days later he again had an attack of the same sort, followed this time by a fairly severe urticarial eruption; a further attack occurred on July 26th, and another—the sixth—on August 2nd. Subsequently he had a few slight rigors and sweats, having nothing like the severity of the major attacks, and each one less than the one before; these occurred up to September 30th, on which date, however, he was looking very well and fit. Between these seizures he appeared in good health, and examination only revealed the presence of a very slight haemic murmur over the cardiac area. The urine contained no abnormal constituents.

It is interesting to note (although such a test is open to the possibility of great error) that when in our search for a diagnosis for his condition we showed him Hewlett and Rodman's account* of "a case of rat-bite disease," the patient, who is by no means an unintelligent man, at once recognized the condition there described as being similar to his own, except in so far as he had no recollection of having received a bite from any of the rodents in his rat-infested house, which is by the side of a sluggish stream and contains "any amount" of both rats and mice.

So far as treatment is concerned, he received quinine and latterly acetyl-salicylic acid, neither of which drugs probably exerted much effect in controlling the course of the disease, which lasted something over ten weeks and seemed to die away gradually of itself rather than to succumb to the treatment directed against it.

Here, then, is a case recognized by us as "rat-bite disease," recognized as such by the patient also, occurring in association with rats, but not in association with rat-bites. Is the diagnosis wrong, or merely the nomenclature?

Practitioner, July, 1913, pp. 86-87. The case there reported is said to be the sixth to have been described in Britain. A possible seventh is recorded by Nicholson in the *Practitioner* for September, 1913, pp. 429-30.

UNDER the will of the late Mr. John Hogg the Royal Victoria Hospital, Belfast, receives a bequest of £5,000.

AT Bow Street Police Court on December 11th four summonses were heard against the Savoy Turkish Baths, Ltd., Jermyn Street, charging them with having applied a false trade description to goods—to wit, Droitwich Brine Baths. After legal arguments, and after expert evidence had been heard, the magistrate committed the defendants, who reserved their defence, for trial at the sessions, and counsel for the plaintiffs, the Corbett Estate Trustees, said that it was proposed to make an application to the King's Bench.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DYSTOCIA DUE TO A FLEXED EVERTED ARM.

IN a young primipara whose pelvis I knew to be normal, as I had measured it previously, the first stage of labour was quite normal, and when the os was fully dilated I ruptured the membranes, the head descending in the L.O.A. position. The patient was put under chloroform, and when the head was expected to have reached the perineum I made a vaginal examination. To my surprise, I found the head in the same position as it had been an hour previously. Forceps were applied, but no real advance was made; the head came down about 1½ in., but when the pain was over and I stopped pulling, the head went back again exactly as if there was a spring pulling it. It was evident that there was something obstructing the shoulders from entering the pelvis.

When the uterus was relaxed I manipulated the forceps so that the child was alternately slightly pushed up and down, and on continuing this for some time the obstruction was overcome, and finally I was able, with the help of the uterine contractions, to bring the head into the world. I then took hold of it with my hand and pulled, but could not get the shoulders out. Inserting a finger I found the left hand in close proximity to the left shoulder. I then took hold of the head in both hands and rotated so as to bring the arm across the front of the body. This being successfully accomplished there was no further difficulty.

In the normal condition, of course, the child descends with its arms folded on the chest, the forearm being flexed on the inverted arm; in this case the left forearm was flexed, but on the everted arm, so that the hand was caught up against the shoulder, and consequently the shoulders did not enter the pelvic brim. The exact course of events following application of forceps is interesting. Two explanations of the difficulty appear feasible: The hand being stopped by the pelvic brim, on pulling with forceps (1) either the shoulders actually descended a little and the arm became less flexed, and then when the pull was taken off the arm reverted to the flexed position, thus causing a kind of spring, or (2) the hand must have remained in its flexed state, and that shoulder not being able to move, the right shoulder alone came down when the pull was made, and on cessation of the pull went back taking the head with it. In either case my manipulation must have caused the right shoulder to have come down first, so that more room was made posteriorly and the left shoulder was enabled to come into the pelvis with the hand at its side.

The child was quite healthy and no injury was done to the arm. I think there I was fortunate, as there must be great risk of fracture in such a case. When the arm causes difficulty during labour it is usually due to its becoming dorsally displaced. In this case it is easy to see that if the arm had been abducted the hand would have been brought behind the head, which is one of the varieties of dorsal displacement.

T. GORDON STARKEY-SMITH, M.D.Lond.,
Late Obstetric House-Physician, St. Thomas's Hospital.
Hungerford,

THE TREATMENT OF SYPHILIS.

THE following case illustrates the power of salvarsan and mercury to abort syphilis, even when given, as in this case, early in the secondary stage.

Mr. X., aged 30, came to me on February 2nd, 1913, complaining of a pimple on the fraenum praeputii of eight days' duration. A chancre was found on the fraenum; it was not indurated, but appeared to be syphilitic and not a soft chancre. I sent him to have his Wassermann reaction taken, and ordered calomel powder to be applied locally. The Wassermann reaction was negative. I saw him again on February 25th, and, though the condition was the same, I thought there was a little induration. I saw him again on March 20th, when he was suffering from a typical specific throat, and a very faint roseolous rash on the chest; the chancre was still present, much smaller but very indurated, and there were hard, shotty glands in the groin. On March 21st he was

given an intravenous injection of salvarsan, 0.55 gram; on March 29th he was given an intramuscular injection of 8 cg. of Vigier's grey oil, a second injection of salvarsan, 0.55 gram, was given on April 20th, and then a weekly injection of grey oil for seven weeks.

He was then told to report himself in a month, but I did not see him till August 13th, when he stated that he had been perfectly well, and that since he had had the salvarsan he had felt better than he had done for months. The Wassermann reaction was negative, and I advised him to do nothing further for three months. He came to see me again on September 6th with symptoms of gonorrhoea of four days' duration. I treated him with irrigations, etc., and on September 20th noticed a hard, indurated patch ½ in. down the urethra; this increased in size, and I diagnosed a chancre and sent him on September 30th to Dr. Eckenstein to see if he could find *Spirochaeta pallida* in the chancre. None were found, and only a few gonococci were demonstrated from the blood taken from the chancre. On October 10th he complained of sore throat, but there were no specific symptoms; he had a chronic granular pharyngitis and indurated tonsils. As the throat did not improve under local treatment, I advised him to see Dr. Andrew Wylie, who said there was a patch, probably specific, on the lingual tonsil. His blood was re-examined on October 24th, when the Wassermann reaction was positive. He has since been under treatment with salvarsan and mercury, and all the symptoms have cleared up.

REMARKS.

I think there can be no doubt that the patient was absolutely cured by the first course of treatment and contracted a second specific infection. I have now treated several hundred cases of syphilis by the combined method of two injections of salvarsan and eight to ten injections of Vigier's grey oil. Nearly all the cases treated in the primary and early secondary stages have been cured, by which I mean that the Wassermann reaction was negative and remained so, and the patients have had no further symptoms, though it is nearly three years since the first cases were so treated.

I desire to thank Dr. Eckenstein for doing the Wassermann tests for me in connexion with this case.

DUDLEY KENNARD, F.R.C.S.Ed.,
Honorary Surgeon, Westminster General Dispensary.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

JAMSETJEE JEEJEEBHOY HOSPITAL, BOMBAY.

TEN CONSECUTIVE CASES OF INTESTINAL OBSTRUCTION.*

(By Major T. S. NEVIS, F.R.C.S., I.M.S.)

THE following sequence of cases of intestinal obstruction under my care are interesting, as they illustrate a number of conditions which give rise to obstruction:

CASE I.

S. G., Hindu, male, aged 14, admitted to the medical wards December 25th, 1911, transferred to the surgical side January 4th, 1912, and operated on January 5th, 1912. During the five months prior to the admission he had suffered from recurring attacks of pain accompanied by vomiting and passage of loose stools with blood and mucus. He had observed a tumour in his abdomen which moved its position from time to time. The patient was very emaciated and weak. A sausage-shaped tumour 6 or 7 in. in length could be felt to the left of the umbilicus obliquely across the abdomen. The tumour was dull on percussion and could be moved laterally, but not from above downwards. Marked peristaltic movements were visible and the abdominal wall showed signs of old and recent branding. He complained of great pain while lying down, which was relieved on sitting up. An intussusception was felt per anum. On January 5th the abdomen was opened to the left of the umbilicus and the intussusception found and partially reduced by manipulation, but the patient's condition was so bad that the operation could not be continued, so a Paul's tube was introduced into the gut and an artificial anus made. The after-treatment consisted of continuous saline rectal irrigation with 10 minims of adrenalin solution added to the pint of the saline. The patient recovered from the operation, but his general condition did not improve, though he passed motions freely through the artificial anus. He suffered from attacks of severe abdominal pain, for which morphine was given hypodermically. On February 7th, 1912, stovaine was injected by lumbar puncture and an incision was made through the right rectus, and the intussuscepted part removed by Jessett's method, that is, the intussusceptum was drawn out and removed through a longitudinal incision in the intussuscipiens, the cut edges of the entering and returning layers united by continuous suture and replaced in the lumen of the gut, the longitudinal incision was then closed and the abdominal wall sutured. The patient's condition during the operation was so serious that intravenous transfusion with saline solution plus adrenalin (10 minims) was necessary. The wound became infected from the colostomy, and superficial suppuration resulted, and though no peritoneal infection followed and motions were passed per anum, he gradually sank and died on February 15th.

CASE II.

G. R., Mohammedan, male, aged 28 years, was operated on for suppurative appendicitis on January 5th, 1912, when the appendix, which was surrounded by dense adhesions and a small quantity of pus, was removed. Discharged cured January 19th.

The patient was readmitted on January 20th, 1912, with abdominal pain and distension, vomiting, and constipation. The abdomen was opened and numerous adhesions were divided, and the patient recovered and remained well till January 30th, 1912, when he was again seized with acute abdominal pain accompanied by distension. Unfortunately I was not sent for but an injection of morphine given, after which he slept for more than twelve hours. I saw him eighteen hours after the onset of pain and operated immediately. On opening the abdomen some bloody fluid escaped; a volvulus of the small intestine was found, and 9 ft. of gangrenous gut having been resected, continuity was restored by lateral anastomosis. The patient died eight hours after operation.

CASE III.

E. F., native Christian, male, aged 25 years, was admitted January 5th, 1912, with chronic intestinal obstruction due to a large ileo-caecal intussusception of long standing. The patient being in a very bad condition no attempt was made to reduce the intussusception, but short circuit was performed by lateral anastomosis between the ileum and the colon. The patient never rallied, and died the following morning.

CASE IV.

A., a female Mohammedan aged 32 years, admitted for chronic intestinal obstruction, due to tubercuious adhesions and bands; was operated on February 4th, 1912. Though relieved of her symptoms and passing motions up to the day of her death, she gradually sank and died, February 9th, 1912.

CASE V.

A. B. P., a female Parsi, aged 52 years, admitted April 13th, 1912, for abdominal distension of fifteen days' duration and pain which was intensified on passage of motions, flatus, or urine. For the last five years she had had recurring attacks of colicky pain accompanied by vomiting, and blood and mucus were passed in the stools. She was in great pain and her abdomen was much distended. Ballooning of the rectum was present, but no growth could be felt. The abdomen was opened to the right of the middle line, and nodules of cancer were detected in the peritoneum, and a growth was found in the rectum adherent to the uterine fundus. The wound was closed and inguinal colostomy performed. The patient's condition gradually improved and she left the hospital May 2nd, 1912, feeling well and passing motions freely through the artificial anus.

CASE VI.

M. S. A., Mohammedan, male, aged 25 years, was admitted July 21st, 1912; about two months previous to the onset of the present illness the patient had been stabbed in the abdomen below the left costal margin. The intestines, which protruded, were not wounded, but there was profuse haemorrhage from an artery in the mesentery, which was ligatured, the intestines returned, and the abdominal wall stitched up. As the wound suppurated the patient remained in hospital for five weeks. On readmission his abdomen was greatly distended and painful, and he had not passed a motion for three days. Pulse 120, and respirations 32. An incision was made to the left of the middle line through the rectus sheath. A large number of adhesions and bands were found between the coils of the small intestines, which were all separated, and the raw surfaces smeared with sterile olive oil, nearly half a pint was introduced into the peritoneal cavity. The patient was discharged cured August 10th, 1912.

CASE VII.

F. C., European, male, aged 7 years. About two months prior to admission, a lawn-roller had passed over his abdomen. He vomited, showed signs of collapse, and was removed to St. George's Hospital, Bombay, where he remained for a week, and was discharged apparently cured. Two or three days later abdominal pain, accompanied by profuse perspiration and vomiting, recurred, and he was again admitted into St. George's Hospital, where he remained six or seven days. I saw him on July 28th, and recommended operation. He was admitted into the Jamsetjee Jeejeebhoy Hospital, but as there was some

* The cases were reported at a recent meeting of the Bombay Branch of the British Medical Association.

difficulty in obtaining the mother's consent no operation was performed until the night of August 4th, 1912, when he was seized with symptoms of acute intestinal obstruction, pain, vomiting, and distension. Peristaltic movements were visible through the abdominal wall. Pulse 120 and respirations 40. The abdomen was opened to the right of the middle line, and the ileum about 2 ft. from the ileo-caecal valve was found acutely kinked and bound down by a fibrous band to the brim of the pelvis close to the ileo-caecal synchondrosis. After division of the band, as no gas could be forced through the strictured part the gut was opened, and it was found that all the coat of the intestine except the peritoneum had been completely divided and formed a valve which blocked the lumen of the gut. Three inches of intestine were resected and continuity restored by lateral anastomosis. Continuous rectal saline irrigation was given, and the following morning his pulse was 160 and respirations 48, but he gradually improved and was discharged quite well September 15th, 1912.

CASE VIII.

B. A., Hindu, male, aged 27 years, admitted October 7th, 1912, with distension of abdomen, pain and vomiting, said to be of one day's duration. The abdomen was opened through the sheath of the rectus, and a volvulus of the greater part of the small intestine was found. The twist was from left to right, and one turn rectified it. The patient made an uninterrupted recovery and was discharged cured November 1st, 1912.

CASE IX.

L. D., Hindu, male, aged 22 years, gave a history of recurring attacks of abdominal distension, lasting two or three hours and passing off completely, during the two months prior to admission. He had suffered from pain, with exacerbations, vomiting and abdominal distension for two days. Pulse 88 and respirations 28. Expression anxious. No result from enema. The abdomen was opened to the right of the middle line and an intussusception 2 in. long found towards the lower end of the ileum. A round worm formed the apex of the intussusception. Reduction was easily effected, and the round worm dislodged and pushed down the intestine for a distance of 12 to 18 in. and the abdomen closed. The patient made a rapid recovery, and 3 grains of santonin were given on February 25th, 1913, followed by 6 grains on the 26th, 27th and 28th. On March 1st a round worm was passed, and though santonin was continued for some days no more worms were seen, and the patient left hospital quite well on March 14th.

CASE X.

H. B., a female, aged 30 years, was admitted May 8th, 1913, with a history of abdominal trouble of some months' duration, which had become worse during the last four days, constipation being absolute, the abdomen tender and greatly distended. There was much abdominal pain and vomiting. Face sunken. Pulse 140 and respirations 32. The abdomen was opened to the right of the middle line, and the caecum was found adherent to the abdominal wall and thickly studded with tubercles. The intestines were matted together, and there were several loops joined by pseudo-anastomosis; also a strong band passing round the intestine at about the junction of the middle with the lower thirds of the ileum, and completely obstructing it. The band was divided and as many of the pseudo-anastomoses as possible were separated and the raw surfaces inverted by Lembert's suture, and the abdomen closed. Continuous saline irrigation was given. The same evening the temperature was 102°, but pulse 120 and respirations 35. The patient gradually improved, and left hospital on May 21st, cured of all symptoms of obstruction and greatly improved in general health.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

Birmingham, November 28th, 1913.

Dr. C. E. PURSLOW in the Chair.

Horse-shoe Kidney.

MR. LEEDHAM-GREEN described a case of horse-shoe kidney and briefly discussed the frequency with which patients with this condition suffered from some renal disease necessitating operative interference. Personally he had operated on four such cases, twice resecting half the organ for severe pyonephrosis and twice removing calculi from the pelvis. All the cases did well save the last one of nephrolithotomy. The patient in this case was a man aged 47, who for twenty years had suffered from pyuria and colicky pains in the abdomen. Three years ago the pain became so constant that he was unable to work. At no time was any haematuria noticed. An *x*-ray photograph showed numerous large stones in the pelvis of each kidney, the stones lying both lower and more to the median line than ordinarily. The urine, as collected from both ureters, was loaded with pus and deficient in urea. An incision was made in the loin on the right side and the stones cleared from the pelvis on that side. Six days later the patient died of bronchitis and uraemia, and on autopsy a small carcinoma was found growing in the isthmus of the kidneys, with a secondary growth in the heart and brain. The specimen was shown.

Cases and Specimens.

The following were among those shown:—Dr. DOUGLAS STANLEY: A case of *Osteomyelitis*. Two sequestra had separated from the right superior maxilla in a child aged 1¾ years, making a communication between the mouth and the nasal cavity; there was swelling and oedema of the right cheek, and a slough involving the upper jaw and the inside of the upper lip. Mr. MILLS said it was fortunate that an involucrum had formed, and therefore the child's appearance would not be very bad. Dr. STANLEY: Specimens from a case of *Pericardial tubercle* which during life simulated an intrathoracic growth. Dr. WYNN remarked that the endothelial site suggested some serious infection, possibly abdominal. Dr. STANLEY replied that there was nothing abnormal in the abdomen, and no previous history of pericarditis. Mr. R. BEATSON HIRD: (1) A man, aged 34, probably the subject of an intracranial growth. He had paralysis of the right fifth cranial nerve both sensory and motor, paralysis of the sixth cranial nerve and the eighth on the same side. There was also paralysis of the soft palate on the right side. There was ulceration of the right cornea. Headache, vomiting, and optic neuritis were all absent, and the patient had no other signs of disease of the nervous system. There were enlarged lymphatic glands in the neck at the angle of the lower jaw on both sides, being more pronounced on the right side where they appeared first. These glands were firm, smooth, somewhat fixed and not tender to touch. There was no nasal disease, and the patient gave a negative Wassermann reaction and von Pirquet test on two separate occasions. The glands had the appearance of being malignant, though no primary source was found. (2) A slide specimen from a *Simple papilloma* removed from the caruncle of the left eye of a young man eight months previously. There had been no recurrence. Mr. FRANK BARNES: (1) A man suffering from *Headache* on the right side and occasional twitching feelings in the left arm; there was bulging of the skull over the right Rolandic area, but *x*-ray examination showed no signs of a growth. (2) A specimen removed from the vertex of the skull of a woman aged 44. She had had a growth as long as she could remember, and during the last eighteen months had suffered from severe headache; the tumour was only just raised above the scalp margin. The skull was trephined, and a tumour found in the diploë which was half an inch thick, the outer table being eroded. Bleeding from the veins of the diploë was troublesome and necessitated performing the operation in two stages. On section, the tumour was found to be a spindle-celled growth of a chronic character, showing fibrous tissue network, and including gritty particles calcareous and amorphous, possibly *Myeloid sarcoma* with calcareous degeneration of cells. Mr. A. W. NUTHALL: A specimen of *Colloid carcinoma of the breast*, removed from an unmarried woman, aged 31, in 1905. The enlarged axillary glands were found to be epitheliomatous, and the breast was removed. In May, 1913, she returned with a similar condition in the other breast, but only the enlarged glands were removed. The exhibitor sought opinions as to the degree of malignancy, and if there was any possible connexion between the original growth and occurrence eight years later. Mr. MILLS: A specimen of an *Adeno-myoma of the round ligament*, from a female patient, aged 44, who had a lump in the left groin for eighteen months. Section of the growth showed *Adeno-fibroma*. There were one or two tubules lined by columnar epithelium amongst the fibro-myomatous tissue, and the growth was very vascular. Dr. PURSLOW agreed that the section was similar to that of a tumour of the round ligament.

NORTH OF ENGLAND BRANCH: NEWCASTLE-ON-TYNE DIVISION.

THE second winter scientific meeting of the Newcastle-on-Tyne Division of the British Medical Association was held at the Northumberland County Asylum, Morpeth, on November 28th, 1913.

"*Langer's Lines.*"

Dr. McDOWALL first showed three cases of Langer's lines. He said he first discovered this furrowed condition of the scalp twenty years ago, and then found that Poggi had described it eight years before. It was simply an exaggeration of the normal condition of the scalp. Langer was an anatomist who sixty years ago tried to follow out the direction of the connective tissue fibres in the skin, making use of the fact, already pointed out by Dupuytren, that if the skin is punctured with a round needle not a round hole but a slit resulted; Langer showed that the connective tissue of the skin was arranged in parallelograms, and the suggestion was that in these cases the skin developed abnormally.

Melancholia.

Dr. McDowall then showed and discussed a series of cases of melancholia:

Case I, the wife of a small farmer, had had a good deal of domestic trouble and extra work, and ultimately broke down; she accused herself of having, by neglect, been the cause of the death of a relative. She lost appetite and did not sleep. She had only been in the asylum for one week, but with open-air treatment, without drugs, was recovering.

That, Dr. McDowall said, was the history of many of these cases. Recent observations on the condition of the blood had shown that in cases of melancholia, and in cases of mania also, there was a well marked leucocytosis, and that was really Nature trying to cure the case. Chloral or sulphonal interfered with this leucocytosis. Mild cases of melancholia simply required change of environment and plenty of suitable food and sleep. The best thing to make them sleep was whisky. The bowels must be attended to, for it was extraordinary how many of these cases were poisoned by absorption from a loaded intestinal canal; no progress was made until the bowels were properly cleared out by enemata, then an occasional dose of opening medicine should be given. Probably in three months the woman would be home again. He never liked to see a mental case recover suddenly—say within a week—because in nearly all such cases relapse occurred.

Case II had been admitted on the previous day. She believed that she was followed everywhere by Mr. Lloyd George in a motor-car. Opinion was tending to the view that mania and melancholia were the same disease, examples of alcoholism illustrated the probability of that. If alcohol were given to a dozen men, one would be depressed, another hilarious, another turbulent, and so on according to the individual effect. Mania and melancholia were probably due to the same toxic substance. The patient was a domestic servant, aged 35. She had become run down and depressed and went home, and had only been there for a week when she was sent to the asylum. For three days before being admitted she had had the delusion about Mr. Lloyd George. Since the illness started she had been dirty in her habits and clothing. In this case the same treatment would be adopted. She would be put in a bed outdoors, and lie there perhaps a month, and would be given books and illustrated papers, or a stocking to knit. The delusion would gradually disappear as her bodily health was restored. Referring to the theory of the origin of delusions advanced by Freud, who traced them back to sexual events occurring perhaps thirty or fifty years before, Dr. McDowall said that the treatment of delusions by psycho-analysis appeared self-condemned on the face of it. He thought that the use of Freud's methods simply put dirty ideas into people's minds, recalling things they had entirley forgotten. Further, one who practised the method had stated that he had spent 400 hours in investing a case, and it was clearly impossible to give this amount of time to each case; in Dr. McDowall's opinion delusions were not connected with sexual matters at all.

Case III was a woman who was admitted suffering from well-marked melancholia. She had attempted to commit suicide. She remained in the asylum from March to October, made an excellent recovery, and was sent home as very often happened when a woman had been out of her house for a number of months she had not found things at home to her liking; she found the house and children dirty. She worked very hard cleaning the house, staying up at nights to do so, with the result that she had a relapse, never slept for three nights, attempted suicide again, and was brought back. Though a cheerful, excellent woman, if she were lost sight of for five minutes she might not be found alive again.

Of all mental diseases the hereditary factor was, perhaps, commonest in melancholia, which recurred generation after generation, and perhaps affected several in each generation. General practitioners, Dr. McDowall observed, might be placed in a great difficulty in regard to attempts at suicide. Even in a case of mild melancholia the feeling of depression now and then became greatly exaggerated, especially in the morning after disturbed nights. A favourable opportunity sometimes tempted the patient to injure herself when it had never entered the mind before. Patients once they had made up their minds as to the methods to be used in a great number of cases neglected other methods ready to their hands. A great difficulty was to get cases of melancholia efficiently looked after in their homes. The friends could not be made to understand the seriousness and great risks of the disease. Even in the case of rich people treatment at home was not efficient; thus in one case the parents set off part of the house for their son's treatment, never went near him, and had attendants; in spite of that the patient got worse and worse, smashed things, and did everything he should not for three months, till at last he did something that made it necessary to send him to an institution. There he got quite well in about two weeks; he was home in about six weeks, and had remained well ever since. In the Morpeth Asylum the instructions as to suicidal cases were in writing, and were given to every person who had to deal with the patient; each had to give a signed acknowledgement of the receipt of the instructions, and it would be well to follow that rule in private practice; but even definite instructions that a patient was to be under continual supervision were never attended to outside an asylum. Amongst fashionable consultants of London a sea voyage used to be advised, but about two out of every three never reached their destination. They went through the port-hole. Suicidal impulses come with terrible suddenness. A patient, not a bad case, was sent with an attendant to Paris. When they arrived, instead of taking a room low down they were sent up to the third story. As they went up to their rooms this greatly tempted the patient, and in an instant he was over and killed on the spot. As long as the patient was suicidal it was always necessary to be prepared for the worst. Dr. McDowall admitted that it was difficult to make sure that a patient was suicidal, but a depressed man was a potential suicide, and the nurse and people who associated with him got to know his tendencies.

Case IV.—The next case was an example of climacteric melancholia in a single woman, who lived with her brother-in-law; she suffered from loss of sleep, had pains in her head, and was anxious about how she was to live, and thinking of looking for a place. She had had delusions for a month, and believed that a certain policeman followed her. The delusion of being followed was extremely common in melancholia. Such patients were sometimes not only suicidal, but very dangerously homicidal. Many tramps to be seen on country roads were dangerous lunatics; with the delusion of persecution by people who followed them they wandered about, and in the end fell into the hands of the police and were sent to the asylum or to Broadmoor. Many melancholics were extremely homicidal, especially puerperal women; cases occurred of women who had murdered one, two, three, or four children. Such cases were very common, and Dr. McDowall concluded by emphasizing the absolute necessity in any case of melancholia of always providing for the worst so that there might be no reflections.

At the conclusion of the demonstration a cordial vote of thanks was passed to Dr. McDowall, who afterwards entertained the members to tea.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

AT a meeting on December 8th, Sir DAVID FERRIER, the President, in the chair, Sir ANTHONY BOWLBY and Mr. D'ARCY POWER showed a specimen of an *Intrathoracic aneurysm*, which had been wired four months before death by means of Colt's apparatus. The patient was a well-to-do woman, aged 52, who had been an athlete, and had contracted syphilis nine years previously. A skiagram had shown a sacculated aneurysm springing from the descending part of the arch of the aorta. At the time of the operation the sac of the aneurysm was found to be thin and to contain no great quantity of clot, as it pulsated equally in every part; 105 in. of dull gilt wire were introduced into the sac, the operation lasting a quarter of an hour. A fortnight later she left the hospital free from pain, and decided that she would remain no longer in bed, but would go up and down stairs and lie out in the garden, the pulsation in the aneurysm remaining imperceptible. This she did for two months. It was then noticed that the skin of the breast beneath the scar was faintly discoloured, and afterwards she was kept in bed. The aneurysm rapidly increased in size, and she died suddenly about four months after the operation. A *post-mortem* examination showed that the aorta had ruptured posteriorly into the mediastinum. The aneurysm was filled with laminated clot for a depth of 2¾ inches. The clot was traversed in its whole length by the wisp of wire, which had expanded fully, and the amount and distribution of the clot showed how much effective coagulation of the blood had taken place since the introduction of the wire, and apparently in consequence of it. The points of interest in the case were: (1) That the aneurysm had occurred in a well-to-do woman; (2) the slow formation of the aneurysm without recognition; (3) the improvement following upon the introduction of the wire; (4) the fatal termination due to extension of the aortic disease, and not to rupture of the aneurysm. Mr. T. H. KELLOCK, in a paper on the advantages of a modified *Operation for circumcision*, said that complete removal of the prepuce was open to objections. Circumcision was employed quite unnecessarily for dysuria, for if the closeness of the adhesion of the prepuce to the orifice of the urethra partially blocked it, the prepuce could be easily separated just around it, and the dysuria, if caused in this way, relieved. A more important cause of dysuria was a pin-hole orifice in the urethra. The remedying of this simple matter should always be attended to, whether circumcision was performed or not. When the prepuce was much adherent, the preputial orifice small, and the prepuce not unduly long, a small incision on the dorsum and one suture was all that was required. For inflammation and suppuration under the prepuce, the same procedure sufficed if the prepuce was not abnormally long. The incision should only be about a quarter of an inch in length, and include both skin and mucous membrane. If these foregoing conditions were complicated by an unduly long prepuce, or if the latter persisted alone, circumcision was indicated, but he advocated a considerably modified operation. It consisted in the removal of that portion only of the prepuce which was redundant.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

AT a meeting in November, Dr. J. B. COLEMAN, President, in the chair, Dr. A. R. PARSONS showed a specimen of *Spontaneous rupture of the heart*. The patient first came to him complaining of flatulence and jagging pains in his right hypochondrium. In connexion with the family history it was mentioned that the mother of the patient died from "burst aneurysm of the heart," and amongst the brothers and sisters of the patient there was a history of cancer of the stomach. The patient was engaged at hard manual labour. Physical examination showed nothing abnormal, nor did the urine contain any abnormal constituent. He was not seen the second time until a month had elapsed. He was admitted to hospital on May 7th, and an examination after a bismuth meal discovered nothing abnormal. On a second examination of the contents of the stomach a positive reaction for blood was obtained, but there was no trace of free hydrochloric acid. He was again seen on July 9th, when the flatulence was as bad as ever, and food had to be taken every two hours in order to produce moderate comfort. He was gradually increasing in weight, and would not consent to operation, as he insisted that his heart would not stand it. He was then lost sight of until September 4th, when he complained of the pain being still as bad as ever, and when weighed on October 4th he was 10 st. 11 lb. From the time he was first examined his weight had increased approximately 1 lb. per month. A few days after this he became actually ill at 2 a.m., and had to call in Dr. Winder, who suspected stomach trouble, possibly perforation; but physical examination showed that neither perforation nor peritonitis had occurred. The patient died shortly afterwards quite suddenly. The speaker's own diagnosis was some form of ulceration, although it could not be overlooked that the patient had gained in weight. The pain he regarded as most likely anginal. On *post-mortem* examination blood was found in the pericardium. The stomach was found to be quite small, and there was no evidence of gastrectasis, but along the lesser curvature was found a hard mass suggestive of malignant disease, but no enlargement of the glands was discovered. It was evident that death was due to rupture of the heart. This was a very rare cause of death. Quain had collected 100 cases, of which 77 were rupture of the left ventricle, and the majority occurred in patients over 60 years of age. The two points which impressed the speaker were that hunger pain was not pathognomonic of duodenal ulcer, and that steady and progressive increase in weight was not incompatible with malignant disease of the stomach. Professor A. C. O'SULLIVAN, to whom the organs had been sent for examination, said that the heart showed a rupture which apparently ran along the anterior wall of the right ventricle close to the septum, and about ¾ in. long. Both ventricles appeared to be ruptured. Blood from the left ventricle must have been pumped into the right ventricle when the septum gave way, and immediately afterwards the wall of the right ventricle ruptured. There was extreme fatty infiltration and diffuse fatty degeneration of the heart muscle. The stomach contained a raised mass running from one curvature to the other, which caused thickening of a large area of the stomach wall. There was no ulceration found anywhere. The cancer was of a rather unusual type—small round-celled—and it was only after several sections were made that the cancerous nature of the growth was established. The speaker remarked that it was seldom a state of mental excitement or agitation was found associated with spontaneous rupture of the heart. He had, however, met with one instance of it. The PRESIDENT recalled a specimen of rupture of the heart shown by him before this Section some seventeen or eighteen years ago, and also a specimen of ruptured aneurysm, which were very similar. It was well known that George II died of rupture of the heart at the age of 76. The condition always appeared to be due to fatty degeneration of the heart muscles. Professor WHITE referred to three cases in the College Museum, in each of which the rupture was due to a localized degeneration of the coronary artery or a branch. Dr. PARSONS, replying, said with reference to the duration of the symptoms that when the patient was first seen (as far back as March last) he complained of constricting pains round his stomach, but whether this was to be attributed to the malignant disease of the stomach he was not quite certain. If due to the cardiac degeneration he would date the symptoms back about six months prior to death. With regard to the question as to whether this was to be looked upon as a case of localized degeneration or a diffuse process, he suggested that the specimen showed both.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

AT a meeting on December 9th, Mr. G. H. MAKINS, President, in the chair, Mr. GILBERT KEMPE recorded a case of *Brachial arterio-venous aneurysm* successfully treated by vascular suture. Having made a diagnosis, he dissected out the brachial artery and its venae comites, and found a communication between the artery and the vein

on the inner side. Hare-lip clamps were placed on the artery above and below, and the opening in the artery closed by two continuous sutures of OOsilk; the opening in the vein was closed with catgut. The junction being water tight, the wound was closed; fourteen days later there was pain along the ulnar nerve, and the blood pressure was 20 mm. less than in the opposite brachial artery, but the hand was not cold nor oedematous. Mr. MAKINS suggested that the reduction of blood pressure might be due to a thrombus or to a diminution of the lumen of the vessel from the scar tissue at the site of the suture. Mr. ZACHARY COPE, having described two cases of *Ruptured intestine* on which he had operated, and one of which survived, said he thought that the signs and symptoms of the injury were so varied that it was difficult to make an early diagnosis. After an abdominal injury great importance must be laid on abdominal pain persisting for some hours, but perhaps shifting its position, bilious vomiting, a steadily rising pulse-rate, and deep local tenderness, followed later by restlessness, signs of free fluid, and peritonitis. Mr. RAYMOND JOHNSON said he had obtained from the registrars of twelve London hospitals accounts of all cases of ruptured intestines admitted between 1908–1912. Of the 44 cases 9 recovered after operation, 21 died after operation and 14 died without operation. The site of the rupture was situated in the duodenum in 5 cases, in the jejunum in 23, in the ileum in 13, in the small intestine in 1, in the hepatic colon 1, and in the rectum 1. In the successful cases the rupture was situated in the duodenum, jejunum or ileum. Out of 32 of these cases abdominal pain occurred with or without tenderness in 21, rigidity in 16, vomiting in 14, increasing pulse-rate in 11, bruising of the abdominal wall in 9, dullness in one or both flanks in 9, diminution or loss of liver dullness in 4. The condition was complicated by other extensive injuries in 14 cases. Mr. BETHAM ROBINSON thought that absence of liver dullness was unusual, and a symptom of little value. Mr. CHEATLE thought that the diagnosis might be hastened by a bismuth meal. Mr. MAKINS thought that the use of motor cars diminished the number of cases, as intestinal ruptures were so often due to the kick of a horse or injury from a carriage pole. Local tenderness was one of the most important signs.

CLINICAL SECTION.

AT a meeting on December 12th, Mr. CHARTERS J. SYMONDS, President, in the chair, the following were among the exhibits:—Dr. F. PARKES WEBER: A case of chronic *Myelocytic leukaemia*, for which benzol had been administered in gelatine capsules, each containing a mixture of 0.5 gram of benzol and 0.5 gram of pure olive oil. This had led to no improvement, and was replaced by treatment with Roentgen rays. Since then the spleen had obviously decreased greatly in bulk and the quality of the blood had improved. Mr. ARTHUR EVANS: A case of *Suppression of urine* in a boy aged 11, which appeared after an operation for acute appendicitis, and was cured by double nephrotomy. A small piece of the left kidney, removed at the time of the operation, was found to be in a condition of cloudy swelling. Mr. T. H. KELLOCK: Four cases of *Malignant disease treated by radium*. (1) A man, aged 66, who had had squamous-celled carcinoma of the upper lip deeply ulcerated and extending far into the mucous membrane, almost to the alveolar margin. The radium had been buried in the growth for twenty-four hours. After the reaction, which took a fortnight to heal, the ulcer had disappeared. A little hardening and scarring was all that remained of the growth. (2) A man, aged 35, who had had an inoperable growth at the back of the tongue. It was ulcerated and infiltrated the glosso-epiglottic fold. The cervical glands were enlarged. Radium was inserted into the growth and left for fifteen hours. This caused it practically to disappear in fourteen days, and the glands in the neck became smaller and more movable. These were removed. All that remained was a little hardness about the scar on the right side of the neck. (3) A woman, aged 50, who had had a squamous-celled carcinoma at the margin of the meatus of the right ear, involving the pinna and the skin. Similar treatment had been very successful. (4) A man, aged 55, who had had a malignant ulcer of the lower lip. Fifteen days after the insertion of radium the greater part of the growth had disappeared, and there was little difference to be observed between the site of the growth and the rest of the lip. Dr. F. S. PALMER: A case of *Congenital heart disease* and hemiplegia in a woman, aged 22. Mr. W. G. SPENCER: Latent *Fracture of the patella* in a man, aged 46. After the injury he was able to walk nine miles, and again fifteen miles, and also to go up and down stairs frequently until a week later, when the aponeurosis tore widely with separation of the fragments. Dr. F. J. POYNTON: A case of *Cleido-cranio-dysostosis*, with signs pointing to pressure on the brachial plexus by the rudimentary clavicles, in a girl aged 19.

SECTION OF DISEASES OF CHILDREN.

AT a meeting on November 28th, Dr. LEONARD GUTHRIE, President, in the chair, the following were among the exhibits:—Dr. C. E. ZUNDEL: A case of *Recrudescent rickets* with tuberculosis and infantilism. Former hospital records showed that the patient, a boy now aged 14 years, was at the age of 7 years treated as an out-patient and then as an in-patient. At that time he was described as very undersized and with marked rickets. At the age of 11 years he was admitted to the Brompton Hospital with marked ascites, the abdomen being tapped six times in nine months. When he came under observation in June, 1913, his height was 3 ft. 4 in. and weight 2 st. 11 lb. Marked deformities of the forearms were present, due to recent fractures. There was some bronchopneumonia and considerable ascites. The Wassermann reaction was negative. Dr. F. G. CROOKSHANK and Mr. L. E. C. NORBURY: *Bilateral congenital dislocation of the hip* in twin sisters aged 8 years 11 months. In each case there was marked displacement of the head of the femur on to the dorsum ilii on either side. Dr. F. G. CROOKSHANK: (1) A case of *Nervous cretinism*. The patient, a female, now aged 5½ years, was first seen in 1912, when it was noted that the skin was harsh, the gait tottery, and the knee-jerks increased. Later the gait became more ataxic and the speech became defective. The child had been treated with thyroid extract and could walk and talk well, and had lost almost all her symptoms. (2) A case of *Jaw-winking* in a girl aged 9 years, who had congenital unilateral ptosis. When the face muscles were at rest the ptosis was considerable, but when she depressed her jaw and "ringed" her month, the eye opened widely. Mr. PHILIP TURNER and Dr. H. TIPPING: A case in which a *Mesenteric cyst* had simulated an intussusception. The patient, a previously healthy boy aged 4 months, had a "crying fit," after which blood was passed per anum. After admission to the hospital a rectal examination showed the presence of recent blood, though no lump could be felt. An anaesthetic was given, and then a movable tumour could be felt close to the umbilicus. When the abdomen was opened the lump was found to be a tense cyst, about 1 in. in diameter, situated in the mesentery in the angle between the ileum and the colon. It bulged into both these portions of the intestine, causing obstruction at the ileo-caecal valve. The cyst wall was so incorporated with the ileum and the colon that it could not be removed. The cyst was incised, the greater part of the wall clipped away, and the remainder sutured to the parietal peritoneum. The child made an excellent recovery, but a sinus which discharges glairy odourless fluid still persists. Histologically the lining membrane of the cyst had the same structure as the mucous membrane of small intestine. Dr. W. J. MIDELTON: Two cases of *Dermatitis herpetiformis* which had been treated by counter-irritation. The first patient, aged 7 years, had after an attack of scarlet fever developed dermatitis which had persisted for over three years; counter-irritation was then commenced, and the patient was well in three weeks. There had since been occasional slight relapses. In the second case, a boy aged 7 years, the same treatment had been equally satisfactory. Dr. G. A. SUTHERLAND: A case of *Paralysis of the abdominal muscles* and collapse of the lung in a child, aged 15 months. In May it had an indefinite illness, which was eventually identified by the after-results as anterior poliomyelitis. Dr. J. W. CARR: A case of *Enlargement of the liver* with ascites in a boy, aged 2½ years; he had been tapped on thirteen occasions; the liver was regarded as almost certainly cirrhotic, but the cause of the cirrhosis was obscure.

Dr. F. J. POYNTON: (1) A case of *Osteogenesis imperfecta* with great distortion of the bones of the lower limbs. The patient, aged 11 years, has been admitted three times to University College Hospital, and many times to Great Ormond Street, with fractures of the bones of the legs. Her bones have been soft and easily broken from birth, and she has never been able to walk alone. (2) A female child, aged 5 years, with a slightly *Enlarged liver and spleen*. Examination showed marked cyanosis of lips, tongue, and throat, and clubbed fingers. No bruits could be heard, but in May, 1913, there was a pulmonary systolic bruit; it was doubtful whether this was congenital or haemic. The Wassermann reaction was negative. Mr. H. A. T. FAIRBANK: A case of *Ununited fracture of the neck of the femur* which he had treated by operation eight years after the injury. When first seen, the limb was wasted and held in an everted position. Flexion was limited and abduction practically abolished. Real shortening 2 in. A skiagram showed an ununited fracture and coxa vara. The fibrous bond of union was excised, and two screws were driven from the trochanteric surface through into the head. The operation had been successful in abolishing the pain and arresting the progress of the deformity. Dr. F. LANGMEAD: Two sisters, aged 6 and 5, with *Deformity of bones* and splenomegaly. The elder child, aged 6 years and five months, shows skeletal changes closely resembling those of rickets, as well as marked enlargement of the spleen. In the younger case the bony changes were of a corresponding kind but less developed, and the spleen was less enlarged. The chief points of interest were the progressive character both of the skeletal changes and the splenomegaly, and the fact that this occurred at an age when the usual period for active rickets was over.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 28th, Mr. A. ERNEST MAYLARD, President, in the chair, Mr. HENRY RUTHERFURD showed the following among other cases: (1) A *Plexiform neurofibroma* in a girl aged 8 years, with hypertrophic and pigmentary changes in the skin and some angiomatous patches, atrophy of muscles, and atrophy or rarification of bone, as indicated by repeated fractures and verified by skiagraphs. (2) A case of *Cystic disease of the upper end of the humerus* in a boy aged 14 years; it had been treated by free opening up and implantation of bone. (3) With Professor J. H. TEACHER: The spinal column of a boy aged 6 years, the seat of tuberculous foci in the upper cervical, dorsal, and lumbo-sacral regions. Dr. A. LOUISE MCILROY recorded a case of *Chorion epithelioma* and one of *Myomata complicated by pregnancy* and showed coloured photographs. In the first case, that of a patient aged 30, a diagnosis of incomplete abortion was made, and on microscopic examination of the curettings Dr. Teacher found chorion-epitheliomatous tissue. Panhysterectomy was performed with complete recovery. In the second case the patient, aged 30, had been married six years and was sterile. Dysmenorrhoea and menorrhagia had been present. On the onset of uterine haemorrhage the patient was examined under an anaesthetic, and myomata with pregnancy diagnosed. Supravaginal hysterectomy was performed, and on section of the specimen a four and a half months fetus was seen. In the wall of the uterus were several myomata, one of which showed marked degenerative changes. The patient's health was markedly improved after operation. Dr. J. W. MCNEE, in a paper on recent work on the *Etiology of gall stones*, said the views of the etiology of gall stones which had been held for the last twenty years were those of Naunyn, who recognized two factors in the formation of all varieties of gall stones—(1) stasis of the bile in the gall bladder and (2) inflammatory catarrh of the gall-bladder mucosa induced by micro-organisms. The work of Aschoff and his pupils, now accepted practically throughout Germany, had shown that three factors operated: (*a*) Stasis, by permitting the separating out of the constituents of gall stones from the bile; the importance of this factor was seen in pregnancy and in general adiposity, two conditions in which the proclivity to gall-stone formation was well recognized. (*b*) Altered concentration of the constituents of the bile—that is, increase of the stone-forming elements. It was now known that the amount of cholesterin in the blood serum was above the normal in pregnancy, in diabetes mellitus and other conditions of disease, and below the normal in tuberculosis, tumours, and acute fevers except enteric; while the speaker, using the Windaus digitonin method in Aschoff's laboratory, had found in 4 cases of pregnancy amounts of cholesterin from four to five times the normal, and in a case of acute phthisis a month or two after delivery an amount eight times the normal. (*c*) Infection by micro-organisms, most commonly of the coli-typhoid group, which set up a cholecystitis, with inflammatory exudate and increased mucous secretion from the gall-bladder walls, and consequent addition of excess of lime salts to the bile. About 20 per cent. of all stones had, at first at least, no inflammatory factor in their origin. These were the pure cholesterin stones, crystalline in structure, occurring singly, often without symptoms and due to the combined effect of stasis and excess of cholesterin in the bile. Infection of a gall bladder containing such a stone led to an excess of lime salts in the bile and to the coating of the stone with a mantle of chalk and cholesterin deposited in concentric layers, and so to the formation of a "combination stone." Few cases of pure cholesterin stones escaped this inflammatory change, while 20 per cent. of all cases of inflammatory cholelithiasis passed through a non-inflammatory period. The commonest type of stone was the cholesterin-chalk or cholesterin-chalk-pigment stone, non-crystalline, of concentric formation, always multiple, often extraordinarily numerous, and originating in a gall bladder which had become inflamed, and which might or might not have previously contained a stone of aseptic origin. Any truly rational treatment of gall stones must not only aim at removal of the stones present, but must combat the stasis in the gall bladder by adequate drainage, promote healing of the inflamed and often ulcerated gall-bladder wall, and take cognizance of the conditions which tended to increase the excretion of cholesterin in the bile.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 18th, Dr. SYKES in the chair, Dr. DUNLOP introduced a discussion on *Non-tuberculous disease of joints*, confining his remarks to rheumatoid arthritis. It was, he considered, a general disease and prima facie a wasting disorder with considerable vasomotor disturbance. The prognosis was most gloomy. The treatment may be considered under three heads: All forms of suspected chronic infection must be vigorously treated, that is, teeth, otorrhoea, etc.; the diet should be good and substantial, and the intestinal tract required careful consideration. Dr. C. M. F. ATHORP, discussing the question from a surgical aspect, spoke of syphilitic, nervous (such as Charcot's) and gonorrhoeal disorders of joints. He was not yet much impressed by the advantages of vaccine treatment of non-tuberculous joint disease. Aspiration combined with the injection of formalin in glycerine seemed to give very good results, particularly in the gonorrhoeal forms. Drainage increases the tendency to ankylosis and should be avoided whenever possible. Mr. BASIL HUGHES considered the vaccine treatment entitled to trial in suitable cases. He had seen marked benefit from its use in rheumatoid and gonorrhoeal cases, but the vaccine must be autogenous: stock vaccines only led to disappointment and failure.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 12th, Dr. P. WATSON-WILLIAMS in the chair, Mr. F. E. SHIPWAY demonstrated an apparatus for the intratracheal insufflation of ether, and pointed out that the advantages of the method, in addition to prevention of collapse of the lung, were the prevention of the aspiration of blood from the pharynx and the very slight amount of respiratory movement. Mr. S. V. STOCK stated that deaths had occurred in this method from employing too high a pressure, and he demonstrated a combined safety-valve and manometer which he had constructed to obviate this risk. Mr. HEY GROVES showed a simplified apparatus operated by a foot bellows instead of by a motor pump. Dr. WATSON-WILLIAMS said he had found that this method obviated any risk of the entry of

blood into the lower respiratory tract during nasal and pharyngeal operations. Dr. J. A. NIXON read notes on a case of splenectomy for simple splenomegaly. The spleen on section showed a simple hyperplasia. As a result of the operation there was an immediate rise in the blood colour index. Mr. HEY GROVES showed a spleen removed from a woman with splenic enlargement, hepatic cirrhosis, and ascites, in which some improvement took place after operation, and suggested that removal of the spleen produced improvement by the relief of the portal circulation. Mr. J. LACY FIRTH demonstrated a specimen of abscess of the liver. Although there had been no symptoms of dysentery during life, extensive ulcerative lesions were found in the colon *post mortem*.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 19th, Mr. R. G. HOGARTH, President, in the chair, Dr. F. H. JACOB, in a paper on *Vaccines and tuberculins*, said that now that opsonic indices had been thoroughly tested in the various diseases, it was more possible to rely on clinical guides as to dosage and intervals. If the dose were a proper one it should be followed by a negative phase in which the focal symptoms of the disease were increased for twenty-four to forty eight hours. Subsequent to this there should be a marked improvement in all the focal symptoms, that is, there should be a substantial positive phase. After an interval of seven to ten days an increased dose should be administered. In acute diseases the initial dose should be small, and should be followed by a second dose after three or four days. In vaccine treatment the best results were in cases of boils. On the other hand, the speaker had yet to obtain a cure in a case of ulcerative endocarditis. *B. coli* vaccine together with urotropine in pyelo-nephritis gave good results. His results in pneumonia were not so good. He was convinced that tuberculin had often caused the death of patients by lighting up their disease. For diagnostic purposes the dose should be very small. He found T.R. the safest. Provided adjuvant treatment was also carried out he was convinced that tuberculin did good in some special chronic cases in which the treatment was maintained for at least a year.

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting on November 26th, Dr. LINDSAY, President, in the chair, Dr. JAMES TODD introduced a discussion on the *Treatment of abortion*, and spoke from the point of view of the general practitioner. After noting that he would apply the term abortion to any case in which pregnancy ended before the child was viable, he said that in his experience only 10 or 12 cases out of thirty to fifty abortions were treated by medical men. Practitioners should do all in their power to educate the public as to the dangers incident to abortion. Preventive treatment depended on a knowledge of antenatal pathology. Frequently the exciting cause was overexertion or some local lesion, such as a displacement of the uterus, and especially endometritis. In cases usually termed "habitual abortion," iron with potassium chlorate was useful. In threatened or occurring abortion treatment depended on diagnosis, and this was sometimes difficult. Extrauterine pregnancy had to be kept in mind. If ordinary pregnancy were diagnosed, the question whether the abortion was avoidable or inevitable was vital. When haemorrhage was the leading symptom, its continuance alone should not be taken as proof of inevitable abortion. If the bleeding were sudden and large, it generally denoted separation of the ovum. Rest in bed and arrest of the reflexes by opium was to be recommended if the pregnancy were likely to resume its normal course. In many cases of inevitable abortion the speaker had felt justified in adopting an expectant attitude; the patients feared an operation and grudged the expenses, and the conditions of the home were not without danger. Two conditions which compel interference were excessive bleeding and signs of sepsis. Plugging the vagina in a working-class home was difficult and dangerous, and of little use in preventing haemorrhage. Evidence of early septic infection indicated emptying the uterus. Frequently the uterus could be cleared out thoroughly with the fingers, if not by the gentle use of a blunt curette. Routine douching after operation might very easily do harm. The speaker usually kept the patient in bed a shorter time after abortion than after normal labour. Professor JARDINE, discussing the subject from the consultant's point of view, remarked on the increase of cases of abortion which had been noted in the practice of the Glasgow Maternity and Women's Hospital. The consultant's point of view was in essence that of the general practitioner, namely, the best treatment for the patient. He had not yet found a case in which he could say plugging had been properly carried out before the patient came to hospital. A few tampons of wool in the vagina were not a sufficient plug, and did not do any good in preventing further bleeding. Potassium chlorate was a useful drug, and had good effects in many cases. In using the curette he advocated an instrument with a large loop, but with a sharp edge, as it was not easy to remove adherent decidual tissue otherwise. Sometimes a misconception arose in practitioners' minds as to when an abortion was complete. Often patients with profuse discharge got well, while those with little or no discharge were really cases of septicaemia and were very fatal. Efficient plugging required really a large quantity of sterile gauze if the plug was to be of any use. Dr. NIGEL STARK said there had been an increase of cases also at the Royal Samaritan Hospital. For emptying the uterus he preferred the use of the curetto to the fingers, and regarded the vaginal plug as of little use in the treatment of bleeding: he preferred ergot. Dr. CASKIE urged the use of a large plug and the administration of ergot and opium. Dr. E. H. L. OLIPHANT mentioned the use of large doses of potassium chlorate up to 40 grains; he had seen it used for months with beneficial effect. He referred to its action on the bowels. Dr. CRAIG thought that the increase in cases seen at the special hospitals was due to the fact that the general hospitals were refusing these cases. He used a large plug and was not satisfied that the plugging was sufficient until complaint was made of pressure on the bladder. Dr. MACFARLANE advocated plugging. Dr. CAMPBELL attributed some part of the increased number of abortions to the increased use of abortifacient drugs. The President, Dr. LINDSAY, said that some cases of abortion were inevitable from the time of conception, and the causes were to be sought between ovulation and impregnation, and also during the early period following conception. In regard to treatment, he advocated rest, opium, and ergot, properly administered. Ergot hindered complete expulsion if given when the ovum was being expelled. Plugs acted by stimulating the vaginal reflex, especially if the plug pressed on the vaginal fornices.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting in Sheffield on November 21st, Dr. W. E. FOTHERGILL, President, in the chair, Mr. MILES H. PHILLIPS (Sheffield) showed a case of *Peritoneal implantation of the ovum*. The patient had been operated upon for ectopic pregnancy, and a bleeding tube removed. A small nodule was noticed under the peritoneum of the pelvic wall and was excised. This proved to be an ovum covered by peritoneum, except in one spot, through which the ovum had probably passed. Mr. W. W. KING (Sheffield), in a paper on the *Serum diagnosis of pregnancy*, described his results of the examination of 50 cases. Of these 25 pregnant patients all gave positive reactions; 5 others in whom the clinical diagnosis of pregnancy was uncertain also gave positive results; 2 recent septic abortions were negative. Out of 18 non-pregnant patients, 2 serums digested placental albumin. As to the question of the specific character of the ferments, his results, he thought, showed that the serum of pregnant patients would in some cases digest carcinomatous tissue, and vice versa. Mr. MILES H. PHILLIPS (Sheffield) showed specimens of *Parasitic ovarian dermoid* and *Papillary ovarian tumour*. Mr. FAVELL (Sheffield) showed a large *Fibromyoma of the vaginal wall*, and Dr. GRAY NEWTON (Sheffield) one of *Tumour of the vulva*.

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

AT a meeting on November 22nd, Dr. J. D. LITHGOW, who was in the chair, advocated the *Use of vascline* in connexion with the packing of the wound in the radical mastoid operation, claiming that thereby the first dressing was rendered painless. In a paper on *Respiratory stoppage* under general anaesthesia he said he had found that in certain cases the laryngeal surface of the epiglottis was firmly fixed by a sucker-like action to the posterior pharyngeal wall. The action could only be overcome by inserting the finger between the epiglottis and the pharyngeal wall. In the cases he had investigated ethyl chloride was used, but he believed his observations would be found to apply equally to cases in which other anaesthetics were used. In a third communication (in conjunction with Mr. PEEL RITCHIE) Dr. Lithgow described a method of inducing fibrosis of the tissues of the inferior turbinates in cases of vasomotor and hypertrophic rhinitis. It had been used in the treatment of haemorrhoids and small simple tumours, and consisted in the injection into the soft parts of the turbinates of a 60 per cent. solution of carbolic acid in glycerine. The following were among the cases and exhibits: Dr. W. G. PORTER: (1) A case of a *Foreign body in the oesophagus* of a child for eight years. The child complained of gastric symptoms, and was small and poorly developed. An *x*-ray photograph showed a foreign body in the oesophagus at a level between the fifth and sixth dorsal vertebrae. On oesophagoscopy a halfpenny was seen, but, on attempting to extract it, it slipped into the stomach. (2) A case of *Post-operative osteomyelitis* of the left frontal bone. A Killian's operation had been performed on the right frontal sinus, and five months later a similar operation was performed on the left side. A few days after this second operation symptoms occurred which led to a diagnosis of osteomyelitis, and it was considered that a wide removal of bone offered the only hope of recovery. This was accordingly carried out. The bone was found to have a glazed appearance, and to be very soft and vascular. The dura appeared healthy. An autogenous vaccine was administered, and the patient gradually recovered, a result which, in view of the very high mortality in such cases, was held to be due to the early recognition of the complication and to the wide removal of bone. Dr. J. K. MILNE DICKIE (1) showed a patient suffering from *Hoarseness* dating from birth. There was an irregular thickening of the left vocal cord, the nature of which it was difficult to determine, and (2) reported a case of *Laryngeal stridor* in a woman of 43, who suffered from asthma and bronchitis. Laryngeal stridor developed, and on examination it was found that the right cord could be abducted only slightly, and the left one not at all. The laryngeal obstruction became severe, and tracheotomy had to be hurriedly performed. A few days later the cords could move quite freely. In the discussion which followed it was suggested that an acute enlargement of the bronchial glands had developed in association with the bronchitis, and that this had caused irritation of the recurrent nerves and adductor spasm. Drs. J. S. FRASER and GIDEON WALKER read a preliminary communication on a clinical investigation of oto-sclerosis, the former following with an epidiascopic demonstration of the pathological anatomy of a variety of cases of ear disease. Dr. J. S. FRASER also showed two patients on whom he had operated for *Middle-ear suppuration with labyrinth symptoms*. He described the cases in detail. In both the labyrinth phenomena were somewhat anomalous. In one the caloric reactions and the pointing test gave varying results at different periods. No fistula symptom was obtained, and on performing the simple Schwartze operation no fistula was found. The tympanic cavity was not interferred with, and the hearing returned to normal, and the labyrinth phenomena and nystagmus disappeared. In the other case no fistula symptom was obtained, but on the performance of the radical mastoid operation a fistula of the horizontal canal was found. The labyrinth was not opened and the patient made a good recovery. Dr. A. PHILP MITCHELL, in a paper on the etiological *Relationship of the faucial tonsils to tuberculous cervical adenitis*, said that in 64 consecutive cases of children suffering from tuberculous disease of the upper cervical glands he had found histological evidence of tuberculosis of the tonsils in 24. Inoculation of guinea-pigs from these cases yielded positive results in 19, and of these the bovine bacillus was present in 12 and the human in 3. Of hypertrophied tonsils from 90 children who showed no clinical evidence of tuberculous gland disease, those of 6 gave histological evidence of tuberculosis, and 9 yielded positive results on inoculation. Dr. LOGAN TURNER showed: (1) A girl, aged 7, after *Post-operative meningitis*, which set in a day after a radical mastoid operation. A double vestibulotomy was performed and the internal auditory meatus opened up and translabyrinthine drainage established. Lumbar puncture was performed on five occasions and urotropin in 10-grain doses injected into the canal. (2) Two cases of sarcoma of the tonsil operated on a year ago without recurrence. (3) A patient on whom Mr. Wallace had operated three years ago for malignant disease of the upper end of the oesophagus and in whom no recurrence had taken place. (4) He also described the case of a child on whom enucleation of the tonsils and removal of adenoids had been performed two years previously, since which time symptoms of paralysis of the palate had occasionally been observed. Dr. WALKER DOWNIE showed 2 specimens of calculus of the tonsil, and described the cases from which they were removed. A noteworthy feature of the meeting was the museum, to which a number of members contributed specimens, microscopic slides, *x*-ray photographs, sketches and paintings, models, instruments.

MANCHESTER MEDICAL SOCIETY.

AT a meeting on December 3rd Dr. T. GRAHAM BROWN, in a paper on *Walking*, pointed out that animal progression was interesting not only from the standpoint of mechanics, but also from that of the central nervous control of the act, since many of the problems of the physiology of the spinal cord are centred round the phenomenon. The action of walking did not depend merely on volition, since progression might be evoked after removal of the cerebral control. It was a reflex action. The problem centred round the question of the causation of the rhythmic alternation of movement presented by walking. Three theories were open to discussion: (*a*) That the rhythmic alternation of movement was produced reflexly by the self-generated skin stimuli produced during the act by the pressure of the foot on the ground, etc. (*b*) That the alternation was produced by the rhythmic inhibition of a maintained reflex: and that this rhythmic inhibition was self-generated by the movements of the active muscles stimulating the sensory organs in the muscles themselves during the act. (*c*) The fact that progression might take place after all the sensory nerves of the limbs have been destroyed, showed that the rhythmic phenomenon was conditioned in the centres themselves, and was not peripherally self-maintained. It also indicated that the rhythm resulted during a balance of equal and opposite activities in the centres. Therefore, the theory has been propounded that the rhythm was conditioned during the equal and opposite activation of antagonistic spinal centres for the muscles of the limbs. Was this equal and opposite activation reflex? In other words, was it caused by peripheral afferent stimuli? Against this view was the fact that the action of progression might occur at a depth of narcosis at which the peripherally-generated reflexes were abolished. The lecturer's own theory was that the rhythm of progression is conditioned during an equal and opposite activation of the antagonistic spinal centres; that the rhythm is not a property of the nerve cell discharge as such; that it is fundamentally conditioned by the arrangement of the interconnexions of antagonistic nerve cells; that the equal and opposite activation of the equal and opposite nerve cells may be in its turn conditioned by some such state as that produced by the "blood stimulus" in the respiratory centre; and that all the other factors emphasized in other theories are subsidiary to the normal act, helping and controlling it, but not fundamentally conditioning it.

WE are informed that the War Office has contracted with the Sirdar Rubber Company to supply 300 tyres for ambulances.

Reviews.

HEREDITY AND DISEASE.

In 1898, when Dr. H. Lundborg was working in the department for psychiatry at Lund, he was instructed by Professor S. Odman to visit Listerland, a subdivision of the province of Blekinge, in the south of Sweden, for the purpose of investigating some peculiar forms of an apparently hereditary nervous disease reported therefrom. Dr. Lundborg's discoveries proved to be of interest, and induced him to undertake a detailed study of the inhabitants of this part of Sweden. This inquiry occupied much of Dr. Lundborg's time during the succeeding fourteen years, and his final report has now been issued in two parts—text and atlas. The text makes a huge volume; following the example of Macaulay in a well-known case, we may mention that it weighs 10 lb., measures 14 by 10½ by 2 in., and contains 739 pages; the atlas contains numerous excellent photographs and pedigree plates.[1]

The province of Blekinge lies in the south-east of the Scandinavian peninsula, and the subdivision specially considered, Listerland, was at one time an island. This part of the country suffered greatly in historical times from wars, and was indeed the cockpit of Scandinavia. At present the inhabitants exhibit distinct anthropological differences from the Swedish average. There is, for instance, a considerable admixture of brachycephalics, and the percentage of brown-eyed persons is above the normal. From the social and hygienic points of view, the province of Blekinge compares unfavourably with the rest of Sweden, the rates of criminality and mental disease are high, and if the constants of general mortality, pauperism, mental disease, etc., are combined to form a "social-biological index," Blekinge is the worst of the twenty-four provinces of the kingdom.

The inhabitants of this uninviting district who were selected for special inquiry were the descendants of one Pehr Knutson, born in 1691, and his wife Inger Olufsdotter; this couple farmed lands at Mjellby, which passed to their two sons in 1752. One of these, Pehr Pehrsson (1721–1804), was the ancestor of the families dealt with. This man was a yeoman farmer (Grossbauer) and judicial assessor; in 1781 he became a member of the Swedish parliament. Two of his sons were also members of parliament, and one of them seems to have been a man of striking character and qualities. Among the 2,000 odd descendants of Pehr Pehrsson are to be found various yeoman farmers, judicial assessors and district presidents, but the general trend of the family has been a descent in the social scale. A hundred years ago many members of the stock were prosperous or even wealthy; these riches have practically disappeared, and not a few are in conditions of actual poverty. Some are still to be found farming lands held by their forbears, but most of them are oppressed by mortgages. The characteristics of the various descendants are described in detail, and a vast mass of contemporary evidence, extracted from church registers and judicial archives, collected in an appendix, throws light upon the characters and modes of life of individuals and families. Taking a bird's-eye view of the whole, the most striking facts which emerge are: (1) The high proportion of psychically abnormal persons; and (2) the general prevalence of a low grade of social morality as indicated by numerous cases of crimes of violence and other irregularities. The vital statistics of the stocks indicate a somewhat high rate of fertility, tending, however, to diminish in the later generations. On the other hand, the rate of mortality does not appear to have been markedly different from the normal. Much inbreeding appears to have taken place, and Dr. Lundborg has studied the effects in detail. Contrary to what might perhaps have been expected, neither syphilis nor tuberculosis appear to have prevailed at all extensively; alcoholism is, however, a constantly recurring vice.

Dr. Lundborg naturally devotes special attention to the occurrence of the rare nervous disease—myoclonic epilepsy—which originally attracted his notice. This section includes a valuable bibliography of the disease. The author has studied his families from the Mendelian standpoint, and concludes that myoclonic epilepsy behaves like a simple Mendelian recessive character. He arrives at the same result in the case of dementia praecox, and, apparently, all forms of psychopathies, but his evidence as regards the latter is not very cogent. We may indeed remark, with respect to this point, that his comment on Heron's study of the statistics of insanity—namely, that the method used was unsuitable—is quite unsubstantiated. The fact is, of course, that the Galtonian method is an indispensable instrument of research, and that the belief that this method has been in some way superseded by Mendelism rests upon a misapprehension. The fact that this misapprehension has been fostered by the violent quarrels which have raged between certain Mendelians and certain biometricians should not be allowed to detract from the value of the methods the latter have employed.

Dr. Lundborg has prepared numerous tables showing the vital statistics of families of which the parents fell into one or other of various classes—for example, normals, tuberculous, alcoholics, consanguineous. It is noteworthy that the offspring of the tuberculous exhibit a high rate of mortality, but no enhanced percentages of "degenerate" individuals. It is, however, to be remarked that though the mass of material is large, yet when it is subdivided, the resultant groups are so small that the constants are subject to large probable errors. At the conclusion of his work, Dr. Lundborg enters a plea for the State establishment of institutions for research on the lines of his investigation. With this expression of opinion we are in complete sympathy.

On the larger questions of heredity Dr. Lundborg's views do not diverge markedly from those held by most thoughtful persons. Thus he points out that his investigations show that the danger of inbreeding depends upon whether the stock is or is not biologically sound, and that there is no general answer to the common question whether such marriages are undesirable. Again, in discussing the eugenic aspect of alcoholism, he puts on record views not likely to be accepted by either of the extreme parties. From the standpoint of the research worker, the sections dealing with the heredity of nervous disease are likely to be of most value. Dr. Lundborg has avoided several of the pitfalls which beset that subject, and has provided ample material for checking and controlling his conclusions. We have certainly no hesitation in saying that Dr. Lundborg's report is indispensable to any one making a complete study of the groundwork of eugenics, and only regret that both its price and its bulk will put it out of the reach of most private readers. The former was perhaps unavoidable, but not the latter. A volume of this size is indeed exceptionally unhandy. The atlas had necessarily to be published in its present format, but the text could have been issued in octavo volumes; such of the maps and diagrams as could not be reduced or arranged on folded plates might have been transferred to the atlas.

Sweden has long been famous for the contributions made by her sons to anthropology and vital statistics; Dr. Lundborg has produced a volume not unworthy to be ranked with those of his illustrious compatriots. A consciousness of this fact will be some recompense for the years of labour his task has involved.

[1] *Medizinisch-biologische Familienforschungen innerhalb eines abgeschlossenen Bauerngeschlechtes in Schweden (Provinz Blekinge).* Von Dr. H. Lundborg. Jena: G. Fischer. 1913. (Dbl. sup. roy. 8vo, pp. 739; 10 photographs; 50 plates. Mk. 120.)

COMPARATIVE ANATOMY.

In studying vertebrate anatomy the usual plan is to dissect representatives of various classes of vertebrates, and in this way to lay down a broad basis of knowledge of the various organs and their positions in these types. It is necessary, however, that these facts should be gathered up, properly compared and correlated with each other and with the conditions in other animals, and thus a good text-book dealing with the subject in a general manner is essential. Such a book as the one we have before us, *The Comparative Anatomy of Vertebrates*,[2] by Professor J. S. Kingsley, will serve such a purpose admirably. It is very good indeed, quite up to date, and distinctly original in its treatment of the subject. Embryology is made the basis, the various structures being traced from the undifferentiated egg into the adult condition. This renders

[2] *Comparative Anatomy of Vertebrates.* By J. S. Kingsley. London: J. Murray. 1913. (Med. 8vo, pp. 410; 346 figures. 12s. net.)

it easy, as the author remarks, "to compare the embryonic stages of the higher vertebrates with the adults of the lower, and to recognize the resemblances and differences between organs in the separate classes." The description of any species in detail is not aimed at, but instead a view of the general morphology of all vertebrates. We are glad to notice that the author has devoted over forty pages to the skull, for there is no structure of vertebrate anatomy which lends itself more readily as an introduction to the study of the subject, or one of greater value to the student beginning his work. The skull also has a special interest, for nowhere else in the skeleton is there the same chance of tracing modifications in all groups since the first appearance of vertebrates on the earth. The illustrations, numbering 346, are a special feature of the book; they are drawn largely from original sources. The figures called "stereograms" are excellent, and ought to make things clear to students. The book is nicely got up, but it is a pity the author did not take the trouble to read his proofs properly; some disfiguring printers' errors might thus have been avoided—for example, in the second line of introduction on page 1, and in the legends of figures 98, 190, etc.

Dr. JENKINSON is now so well known to morphologists by his researches in experimental embryology that his book on *Vertebrate Embryology*[3] was eagerly anticipated. The volume is appropriately dedicated to Professor Hubrecht, who has himself done so much towards advancing knowledge of the structure and development of the placenta in various classes of the Eutheria. Dr. Jenkinson deals with the early history of the embryo and its fetal membranes, including the structure and formation of the placenta. There is no attempt to give any account of organogeny; this, we are told, is to be reserved for a subsequent volume. Every one engaged in the teaching of comparative anatomy has long felt the want of such a book as this. Previous treatises have been largely based on the developmental history of some one animal, and, however valuable, cannot give a true perspective of the various events recorded. It is only by a wide and comparative study that it is possible to gain a correct insight into the phenomena of development and of the factors underlying them. Knowledge of these matters has made vast strides since the publication of Balfour's great work on comparative embryology, and it is for this reason that all who are not specialists will welcome Dr. Jenkinson's book, which is full without being overloaded. As might naturally be expected owing to the nature of the author's researches, the early phenomena of embryogeny receive the fuller and more up-to-date treatment, while those sections which deal with the placenta do not appear to be quite up to the level of the remainder of the book, though even but little in the nature of adverse criticism can be made. Some of the earlier chapters are extremely interesting and illuminating. The account of the germ cells and of their migrations from the position in which they are formed until they find a home in the gonads is very lucidly written, and will no doubt afford new facts to many. Students and teachers alike will find the book most useful. It gives an admirable summary of the present position of our knowledge of embryology, and, unlike many summaries, it is neither so condensed as to be unintelligible nor so detailed that essential facts are obscured. For the guidance of those who wish to study the subjects more fully, a useful and well-selected bibliography is appended to each chapter. The illustrations are, on the whole, good, but some of them are too large for the size of the page. Dr. Jenkinson has undertaken a useful piece of work, and success has crowned his efforts.

Dr. DREW'S *Invertebrate Zoology*[4] has reached a second edition, which is amplified by the study of a few additional animal forms and by the addition of some references to the literature. It is essentially a laboratory manual, and in its preparation Dr. Drew has been assisted by members of the staff of the well-known Marine Biological Station at Woods Hole, Massachusetts. The method adopted is to give instructions as to practical procedure, and to direct the attention of the student to particular points by means of questions, the answers to which are to be found by direct observation. The number of forms dealt with is large, and many are by no means to be regarded as types. Though the "type method" is, as the author tells us, the prevailing method of laboratory study, the selection has obviously been made with a view to inculcating the study of the phenomena of adaptation. A student who has worked carefully through this manual will have a good grip of the science of zoology. There is, however, one disadvantage: many of the animals are not readily obtainable, especially in this country. Nevertheless, by careful substitution, it could be adapted for the use of senior students of zoology. As a manual for medical students it covers too wide a field. There is a useful glossary at the end of the book.

[3] *Vertebrate Embryology, comprising the Early History of the Embryo and its Foetal Membranes.* By J. W. Jenkinson, M.A., D.Sc., Lecturer in Embryology, University of Oxford. Oxford: The Clarendon Press. 1913. (Med. 8vo, pp. 265; 162 figures. 12s. 6d net.)

[4] *A Laboratory Manual of Invertebrate Zoology.* By Gilman A. Drew, Ph.D., Assistant Director of the Marine Biological Laboratory, Woods Hole, Massachusetts. Second revised edition. Philadelphia and London: W. B. Saunders Company. 1913. (Demy 8vo, pp. 222. 6s. net.)

DERMATOLOGY.

CARBON dioxide snow is one of the simplest therapeutic agents we possess, and next to radium the least alarming to the patient. The indications for its application are manifold, and inasmuch as its action is purely local and mechanical, it is free from any serious risk to the life or health of the patient. The little manual,[5] *Carbon Dioxide Snow, its Therapeutic Uses*, by Dr. J. HALL-EDWARDS, describing the most approved and least wasteful methods of collection and application, is a very concise and valuable exposition of all the points which a wide experience in dermatological therapeutics has taught him to note. The practitioner will easily master the contents of the book in an hour, and will assuredly add, if he has not hitherto been tempted to do so, the frozen pencil to his armamentarium. It comes to this—that the method may be used in any superficial chronic ailment or malformation of the human skin, provided it is not generalized. It has been found of the greatest value in early rodent ulcer, lupus erythematosus, warts, and angiomata; in these conditions it has almost become the method of choice. The importance of great caution in the case of young children and women with a delicate skin is duly emphasized by the author, and as the danger of producing a slough is almost the only one to be faced in using the remedy, it is always better to do too little at a sitting than too much. These points are well brought out in a paragraph on p. 54, and the excellent microphotographs of the histological changes produced by freezing are calculated to emphasize these warnings by ocular demonstration. The book can be confidently recommended to any one who desires information in simple technique and in ordinary cases, although it hardly covers enough ground as a book of reference for the dermatological expert.

Dr. DAVID WALSH'S[6] little handbook on *Diseases of the Skin* for students and practitioners has the merit of being cheap, and is of a more convenient size than most dermatological works, for it is printed on just 300 pages of thin paper. The principal feature to which we would call attention is the emphasis the author rightly lays upon the close connexion between disorders of the circulatory skin with various dermatoses, notably eczema and acne rosacea. It is a connexion which probably every physician with much experience of skin disease has had more or less borne in upon him, and which the specialists themselves have of course recognized, but to which perhaps they have not given as much consideration as its importance merits. We are therefore glad that Dr. Walsh has taken the opportunity to draw attention to the subject. Dr. Walsh is interested also in the association of abnormalities in the thyroid gland with certain conditions of the skin, particularly with the congenital high forehead. In some ways the book is very unequal. The latest theories on the life-history of the *Spirochaeta pallida*, although scarcely yet generally accepted, find mention therein, while, on the other hand, the views put forward on the bacteriology of impetigo and eczema nummulare are

[5] *Carbon Dioxide Snow: its Therapeutic Uses.* By J. Hall-Edwards, L.R.C.P., F.R.S.(Edin.), Hon. F.R.P.S. London: Simpkin, Marshall, Hamilton, Kent and Co. 1913. (Cr. 8vo, pp. 93. 3s. 6d. net.)

[6] *Diseases of the Skin: A Handbook for Students and Practitioners.* By David Walsh, M.D.Edin. London: Baillière, Tindall, and Cox. 1913. (Demy 8vo, pp. 314; 29 figures. 6s. net.)

somewhat confused, and the author does not seem to have grasped the complete significance of Sabouraud's work. In discussing the treatment of ringworm the author warns us against over-stimulation and the use of too powerful remedies; in fact, he says that, should irritation occur, treatment should be suspended. Most dermatologists find that the only effective treatment for ringworm other than x rays is to employ something that will cause local inflammation, and thus cause the hairs on the infected patch to drop out. There are one or two slips in the English employed; for example, on page 184 near the bottom, the sentence beginning: "Carbon dioxide snow gives excellent results, and moderately firm pressure . . . being enough to cure . . .", while on page 146 occur the words, "The importance of identification of the pathogenic organism . . . is important." The illustrations are not very numerous, but with few exceptions they are clear.

NOTES ON BOOKS.

IF modern mothers are content to remain in ignorance of their duties towards their children, it is not for want of books from which they may learn what those duties are and how they may best discharge them. One of the most practical of the numerous handbooks now issued for the guidance of inexperienced parents is Dr. LOUIS STARR'S *Hygiene of the Nursery*,[7] of which a new and revised edition has recently appeared. This eighth edition has been brought to date, and might serve as a model of what such a book should be. Written in a clear, concise style, and with a careful avoidance of all technicalities likely to confuse the lay reader, it contains what it is necessary for parents to know concerning the health of their children and the management of the nursery, and is full of sound advice as to the many difficulties and problems arising from the care of a young family. The book is well printed, and illustrated with numerous diagrams.

The second edition of HIRSCHMAN'S *Handbook of Diseases of the Rectum*,[8] "revised and rewritten," is in many respects a better book than the former issue, which was, however, well received. The limitations of local anaesthesia and "office" treatment attain the dignity of a special chapter, and there are indications that the author prefers to keep his practice well within them. The book does not profess to deal, except incidentally, with cancer, but gives a good working account of "obstipation," with bismuth pictures of various types of mechanical obstacles to the normal passage of intestinal contents; of pruritus ani; fissure; ulceration; abscesses of different types and situations; fistula, with good x-ray pictures of bismuth-filled tracks; haemorrhoids, many types of which Dr. Hirschman operates upon under local anaesthesia; polypi and "cryptitis"; proctitis and sigmoiditis; dysentery (by Dr. Jelks); prolapse; and concludes with chapters on "technic" and on the examination of the faeces. It is a useful book.

The tendency of all year books to increase in bulk is illustrated by the familiar and indispensable *Whitaker's Almanack*.[9] The forty-sixth annual volume (1914) contains thirty-two pages more than the forty-fifth. This increase is attributable to additions to the general statistical tables and summaries, and the insertion of a certain number of articles on matters of current interest, including land banks, the Insurance Amendment Bill, aeronautics, and wireless telegraphy. The restoration of the page of hall marks on plate will be a matter of satisfaction to many collectors in a small way. In the section giving the officials of public departments, the Insurance Commissions are for the first time included in England, Scotland, and Ireland respectively; the list for England of the secretarial department, the accountant and comptroller-general's department, and of the outdoor staff are already of formidable length. The volume contains additional statistics on housing and town-planning, and on the increased cost of living. Altogether, as we have often had occasion to say in previous years, the almanack is perhaps the most comprehensive and concise published in the English language.

[7] *Hygiene of the Nursery.* By Louis Starr, M.D., LL.D. Eighth edition. London: H. K. Lewis. 1913. (Post 8vo, pp. 341; 26 illustrations. 3s. 6d. net.)

[8] *Handbook of Diseases of the Rectum.* By Louis J. Hirschman, M.D. Second edition. London: Henry Kimpton. 1913. (Med. 8vo, pp. 339; 172 illustrations, 4 plates. 18s. net.)

[9] London: Whitaker and Son. 1914. (Paper edition, 1s.; bound, 2s. 6d.)

BOOKS FOR NURSES AND STUDENTS.

Among a number of recently published books for nurses and students the place of honour must be given to *Gynaecology for Nurses and Gynaecological Nursing*,[10] by Dr. COMYNS BERKELEY. The first edition presented only a few minor defects, and this second edition is altogether admirable. As *proxime accessit* should be regarded *Babies: A Book for Maternity Nurses*,[11] by Miss MARGARET FRENCH, a sister at the General Lying-in Hospital, York Road. In point of succinctness, clearness of diction, freedom from useless obiter dicta, and soundness of teaching, it is one of the best books on this subject that we have seen. The thirteenth edition of Pye's *Elementary Bandaging and Surgical Dressing*[12] is stated to have been largely rewritten by Mr. W. H. CLAYTON-GREENE, assisted by Mr. V. ZACHARY COPE. Half of its 230 pages are devoted to questions of emergency and first-aid treatment, but nothing is said about dislocations, and though the book as a whole presents most of the features of the original issue, it seems relatively less up to date. There are some useful illustrations in *Bandaging Made Easy*,[13] and as a rule, but by no means invariably, its authoress, Sister M. R. HOSKING, of Tredegar House, Bow, is clear and precise in her directions for the application of different bandages. A good deal of useful information on the subject of preservation of the health and the attentions required by sick persons is supplied in the *Home Nursing Manual*.[14] Its author, Mr. C. F. WIGHTMAN, F.R.C.S., has aimed at supplying a kind of appendix to books on first-aid treatment. The illustrations are informing, and each chapter ends with questions for self-examination. Much the same ground is covered by the *Home Nurse's Handbook of Practical Nursing*,[15] but its authoress, Miss CHARLOTTE A. AIKINS, who has written a number of other books on the subject of nursing, discusses matters in greater detail and supplies a larger number of illustrations. The book entitled *Labour-Room Clinics*,[16] by Captain V. B. GREEN-ARMYTAGE, I.M.S., is based on notes taken of his extempore lectures at the Eden Hospital, Calcutta, by one of his students. Much of the teaching is in the form of question and answer, and as a means of refreshing the memory just before examination, or of clarifying information derived from larger works, the book might be found useful by medical and other midwifery students. It is interleaved for additional notes. Also in the form of question and answer is *Gynaecology*,[17] one of a "Catechism Series," anonymously written purely from the point of view of the passing of examinations. The fifth edition of *Aids to Gynaecology*[18] is intended presumably to fulfil much the same end, but in form resembles a highly condensed treatise on the subject. It is stated to have been largely rewritten by the author, Dr. S. JERVOIS AARONS, and while most of the illustrations which appeared in former editions have been omitted, its subject-matter is now grouped under pathological instead of anatomical headings. A third book on this subject, but dealing with it from the standpoint of nurses, is *Diseases of Women*,[19] by Dr. FLORENCE WILLEY. Having originally appeared as a serial contribution to a nursing paper it is naturally somewhat sketchy in parts, but will no doubt be found highly useful by many nurses, and well describes the precautions which should be taken in dealing with cases of venereal disease.

MEDICAL AND SURGICAL APPLIANCES.

An Inexpensive Transillumination Lamp.

DR. E. DRYBROUGH-SMITH, in concluding a note under this head in the JOURNAL of September 13th, p. 678, stated that he believed the small "pea" lamps he used could be obtained from the Ever Ready Electrical Company, Twickenham. The New British Ever Ready Company, Ltd., Hercules Place, Holloway, London, N., informs us that the company has taken over the British Ever Ready Electrical Company, Ltd., which has been established for many years, and is the only firm or company entitled to sell electrical goods under this name.

[10] The Scientific Press. 2s. 6d. net.
[11] Macmillan and Co. 1s. net.
[12] Bristol: John Wright and Sons. 2s.
[13] London: The Scientific Press. 1s. net.
[14] London: George Gill and Sons. 9d. net.
[15] London: W. B. Saunders Company. 6s. 6d. net.
[16] Calcutta: Thacker, Spink and Co. 2s. 6d. net.
[17] Edinburgh: E. and S. Livingstone. 1s. net.
[18] London: Baillière, Tindall, and Cox. 2s. 6d. net.
[19] London: The Scientific Press. 2s. net.

THE PROGRESS OF SCHOOL HYGIENE.

SIR WILLIAM COLLINS presided at a meeting of the Royal Sanitary Institute on December 9th, when a discussion on the progress of school hygiene was introduced by a report on the Fourth International Congress on School Hygiene at Buffalo by Dr. James Kerr, medical research officer, London County Council.

Dr. KERR grouped the matters with which he dealt into questions of environment, the child's training, and general administration. Of environmental conditions the open-air school was being widely adopted in the contest with debility and tubercle. Fresh air, rest, and feeding were its dominant features, and there was a feeling that residential schools were really required for serious cases and children from homes where tubercle existed. The abundant provision of playgrounds, recreation rooms, and opportunities for swimming and bathing were held to be sound economy and one of the main duties of a municipality, and there Chicago was a decade ahead of any English town. The English class-room was worked to 10 square feet a head; class-rooms which he noted in America and Canada varied from 16 to 21 square feet a head. The most important of school health considerations was effective ventilation. With the average size of class-room and usual English climatic conditions, from 1,000 to 3,000 cubic feet of air per head was hourly required to maintain conditions satisfactory for health, and this could only be obtained by mechanical means. Ventilation formerly supposed to be for the purpose of removing carbon dioxide and poisonous matters excreted by the lungs was now known to be needed for a different purpose, for although a poison in expired air had recently been again asserted to exist, careful workers failed to detect even traces. The purpose of ventilation was the removal of heat from the body, or the prevention of heat accumulation, which interfered with metabolism, inducing the well-known symptoms of fatigue, toxic exhaustion, and breathlessness. Heat was removed by the natural warming of the film of air in contact with the skin; this film must be cooler than the skin, but not too cold to be unpleasant. The specific heat of air, however, was very low, so that air alone did not remove enough heat. A sufficiency was removed only when there was a considerable amount of water vaporized at the surface of the skin, much heat being then rendered latent. The problem of ventilation then became the supply of cool, dry air in a school. Where mechanical arrangements had been used they had generally been discarded, because hitherto, in spite of protests, the mistake had been made of carrying heat by air. All schoolrooms required warming quite separately from the air supply. With class-rooms on the 10 square feet basis any system of natural ventilation would often fail from the health standpoint, and probably 90 to 95 per cent. of English schoolrooms were wanting in this respect; then they helped to manufacture anæmia, debility, and headaches. With a circulation of cool air by a plenum system, or locally by electric fans, even the small class-room could be made healthy. By washing, cooling, and moving the air the health conditions of fresh country air could be reproduced anywhere. These principles had been carried out in America to the extent of advocating "recirculated air" or reventilation.

Lighting of schools was considered at two Buffalo meetings, held jointly with the Engineering Society, and the standard of two-foot candles as the minimum artificial lighting of a school place was unanimously approved. Many views on day lighting were expressed, and an obvious dislike of sunshine in the school was really a climatic peculiarity. Right-handed and back lighting must be adjudged insanitary. The usefulness of a psychological clinic was demonstrated daily, and psychological discussions suggested the need of more leisure for the settling and arranging of memories, and for subconscious thinking. Children did not learn *pro rata* with the hours spent in study. The conservation of nervous energy by adolescents, university students, and teachers was dealt with in several papers, but these subjects were nearly neglected by British school medical officers. Feeding in school came in for commendation on the results obtained. The necessity for abundant public facilities for the care of teeth at early ages was universally accepted. In regard to infectious diseases, the modern view that the town school was a relatively unimportant factor in distribution was well put by several authors of wide experience, and school disinfection was condemned as wasteful and unnecessary. Extreme care, however, was taken with public drinking supplies. In cleansing methods the vacuum arrangements presented novelty. They were first experimentally adopted some years ago in Hamburg.

The school arrangements he saw had piping with wall openings about the size of a fire-plug, communicating with an electrically-worked exhaust machine in the cellar. Oiled floors seemed as generally used as in Germany. The sections on abnormal and defective children dealt mostly with diagnosis and eugenics. A considerable place in the exhibition and on the agenda papers was given to the teaching of sex hygiene in the schools. At a conference of about 2,000 people, the speakers rather skirted the subject, but it was generally handled in a broad-minded way, and very few now seemed to take events, the result of mere awakening instincts, as real evidence of childish depravity. Possibly the teaching of facts or theories in the schools, if they did no actual harm, would do little good, whilst social customs and habits required important physiological functions to be suppressed for the greater part of the years of life in which Nature intended them to be used.

Little was said about medical treatment in hospitals or school clinics. School clinics were taken for granted. Cold feet as an educational complication, and the importance and seriousness of common colds, with the loss both transient and permanent resulting from them, were handled as subjects of importance. The statistician of the American Life Insurance Company analysed the vital statistics of childhood, and the Vice-President of the Metropolitan Life Insurance Company of New York discussed the education of school children in the principles of hygiene. This company carried on an extensive campaign for the health of its clients. It maintained a visiting nurse service in nearly a thousand towns of America and Canada, and they made about a million visits a year. It distributed well got up pamphlets on the health of the worker, consumption, open-air methods, health of babies, health of children, tonsils and adenoids, welfare work, housing, recreation, and so on. The next step would appear to be to contract to keep clients in good health. If it paid a private company to do this in America, it was likely to be found worth doing in England later by or on behalf of the insurance funds.

There was great discussion at the Congress as to whether school hygiene administration should be a separate branch or an integral part of public health. The trend of opinion was that in towns the doctors should be full-time for the important posts, but that the others for medical inspection might be full or part time according to the circumstances. The nurse again put in a strong claim to do most of the medical inspection work. There was a noticeable tendency to overstate her position, and some seemed even to want independence from the doctor. The nurse was generally responsible to the doctor, but she did much treatment herself, and got much done elsewhere. The view was expressed that school hygiene meant more than medical inspection, that the searching out of causes was required, and the prophylaxis of the conditions found on inspection. The intensive study of abnormal children by means of the child study or psychological laboratory was a source of knowledge which nowadays could not be neglected. The environment of the slum child in its class-room could be made to rival physiologically that of the more costly open-air school if proper attention were paid to the movement, temperature and humidity of the air in the class-room, and to the feeding and resting of the child.

A danger which threatened school hygiene was the loss to the community of expert criticism other than official views of the health of children. There had been a movement going on for years, chiefly among medical officers of health, to promote a State Medical Service. Such a service might give the medical officer of health some advantages in his work, and even improve his status, so that naturally he felt a bias towards it. It was, however, a danger to the medical profession, in that it would result in loss of independence, it would hinder scientific progress, and probably lower the status of the profession; but, above all, it would make a vast difference in socializing the relationship between doctor and patient—a loss to the

comfort and confidence of the community which would be very real, and yet it was possibly a threatening danger.

Dr. Kerr concluded by stating that the next congress would be held in Brussels in August, 1915; he suggested that there might be a preliminary and preparatory conference, perhaps under the auspices of the Royal Sanitary Institute, which had always done much to foster school hygiene. Subjects could be allotted to different workers, who during the next eighteen months could make themselves acquainted with all aspects of what they had in hand could make necessary inquiries and investigations, and be prepared with papers or for discussions.

Among those who took part in the discussion were Professor A. BOSTOCK HILL, Medical Officer, Warwickshire County Council; Miss MARION HUNTER-VAUGHAN; Professor H. R. KENWOOD; Mr. C. W. KIMMINS, Chief Inspector (Education) London County Council; Dr. ERIC PRITCHARD; Mr. J. OSBORNE SMITH, and Miss TURNER, Assistant Inspector (Education) London County Council.

THE INSURANCE STRUGGLE IN GERMANY.

THE Minister of Trade, the Minister of Agriculture, and the Minister of the Interior of the Prussian Government have issued an order dealing with the methods available to the insurance societies should they fail to secure the services of a sufficient number of medical men by January 1st, 1914. The paragraphs mainly dealt with in the new Imperial Insurance Order are 370 and 368.

Paragraph 370 authorizes the insurance societies to pay over a lump sum of money to the insured persons in lieu of medical attendance, medicines, and certain appliances, provided that the insurance societies can show that through no fault of their own they have been unable to secure the services of a sufficient number of medical men under contract. The offer of a contract on the part of the medical practitioners must contain "suitable or appropriate" provisions (*angemessene*), and it is on the interpretation of this particular word that the action of the Prussian Ministers is based.

Paragraph 368 provides for the giving of medical treatment in the absence of any contracts at all. In this instance the doctors employed would be the so-called "advisory staffs," or medical men who, in defiance of the medical organizations, are prepared to do work for the insurance societies but will not put their names to paper.

In the JOURNAL of December 13th, p. 1553, mention was made of the decision of the Imperial Bundesrath in regard to the application of paragraph 370. The Prussian Ministers have now determined that the word *angemessene* shall be interpreted in such a way that when the doctors offer service with free choice of doctor, the institution of arbitration courts, and the right of control by medical organizations, the societies will be justified in regarding the provisions as unsuitable. The Prussian Ministers proceed by suggesting that the insurance societies should proceed by paragraph 370, where it can be shown that a sufficient number of doctors who are either willing to sign contracts or not is not available, and that, in the event of special arrangements being made, paragraph 368 should be temporarily employed. It appears, however, that paragraph 368 could only be applied by a few societies under somewhat exceptional conditions. The action of the Prussian Ministers may be accepted as one antagonistic to the doctors, and there can be little doubt that the reasons which have impelled them to take up this attitude are of a political order. It is to be feared that this action will make it almost impossible for the Imperial Government to interfere in favour of the doctors even in localities in which it might be disposed so to do. It is certain, therefore, that on January 1st the fight which the doctors have attempted to avoid will begin, and will be of a very bitter character.

The executive of the Federation of German Doctors' Unions, acting in consultation with various committees of the Leipzig League, has published a statement containing certain general principles and instructions in the *Berliner Aerzte-Correspondenz* of December 13th, 1913. In this it is pointed out that the struggle is not directed against the insured members of the insurance societies, but only against the executives and managers of these societies. The more drastic the means adopted in this fight, the shorter will the struggle be. Since the conditions are not uniformly the same all over the empire, the instructions are drawn up to meet the various possibilities which may arise locally on the application of paragraph 370. In those cases in which the medical service is rendered as heretofore, the members of the medical organizations are instructed to insist on direct payment to the doctors by the insurance societies in every case. Those medical men who have served on the staffs of the societies up to the present will treat the patients as before, save when either the patient or the society refuses the treatment, or some other provision has been made for medical assistance. The doctors will charge the insurance societies the fees adopted in the scale of minimum fees for the empire for private practice. The fee for medical certificates is to be 2 marks. The doctors are instructed to be influenced in their relations with the patients only by the medical requirements of the case and not by any demands of the insurance societies. In regard to all insured persons who start their insurance claims on or after January 1st, 1914, the local medical organizations will announce that the doctors, immediately paragraph 370 comes into effect, are required only to give medical treatment and certificates in return for the locally accepted private fee, save only in those cases in which the payment of the sum of money in lieu of treatment is applied solely to the payment of the local medical men (to the exclusion of imported doctors) for the treatment of sickness and the provision of certificates. This announcement must be made twice weekly in the local newspapers, by writing to the insurance office and to the insurance societies, and on placards in large type in the doctors' waiting-rooms and consulting-rooms or surgeries. In writing to the insurance office, the local medical organization is to request permission for the application of paragraph 119, in order to enable the patients to authorize the societies to pay to the doctors the sums due for treatment and certificates out of the moneys standing to their credit with the societies. This letter was to be sent toward the middle of December, in order that a reply, which is to be published, may be received about December 26th or 27th. If the insurance office agrees to apply the paragraph, the doctor must obtain the signature of the patient to a printed agreement acknowledging the scale of fees, and assigning his claim for money payments from the society to the doctor. If the patient continues to work during the treatment, he will be required to pay a small sum (2 marks) as a guarantee of good faith, which will be repaid him after the termination of the treatment. When the treatment consists of a single visit, payment must be demanded at the time, and a receipt given. In the case of a patient not being able to produce evidence that he is a member of any given insurance society, the doctor is to require the immediate payment of the sum which he estimates as the cost of the whole attendance, and to give a receipt for the money paid. As soon as the treatment is complete an account must be rendered at once. Should the insurance office refuse to apply paragraph 119, the doctor is to require the payment of a sum of money which is in accordance with the nature of the illness and its probable duration before the treatment is begun. Immediately after the treatment is ended an account has to be rendered. All accounts must in the first place be sent to the local medical organization, who will forward them either directly to the insurance society concerned or to the patient. If the patient has signed the transference of his claims to the doctor, this document must be sent to the insurance society with the account. Payment must be required of the patients within a short definite period, such as one week; after this legal measures are to be adopted for the recovery of the money if this has not been paid. When a doctor is sent for in the country, a conveyance or the money for the hire of the same must be sent. Should the insurance societies attempt to fight the doctors by the institution of so-called "out-patients' departments," or other places of medical treatment at which the members of the "advisory" staff of newly imported medical men are employed, contrary to the sanction of the local profession, or should the treatment and certification be handed over to insurance society officials, employers, midwives, nurses, or other persons (see BRITISH MEDICAL JOURNAL, December

6th, p. 1504), the certification and medical treatment is to be left rigidly in the hands of these persons. The local medical organizations are strongly urged to enforce these instructions on their members, and the duty is further imposed upon them of distributing the sums of money which they collect equitably in order to counterbalance any attempted boycott of an individual medical man. Lastly, it will be required of them to come to an understanding with hospital surgeons and physicians, and also with the managers and owners of polyclinics, as to the best means of preventing the insurance societies from abusing these institutions in the struggle against the doctors.

If the profession is strong enough and sufficiently united to carry out the fight on these lines, and to refuse all medical attendance save in accordance with the conditions contained in these instructions, an easy victory for the doctors is confidently anticipated. It will, of course, be necessary for them to indicate in no ambiguous manner to the State insurance offices the hardships to which the obstinacy of the insurance societies and the partiality of the Governments have led, and to cast every shred of responsibility for this on to the shoulders of those who refused to accept the reasonable terms contained in the draft principles of the doctors. But while the insured must suffer considerably under such terms of service as these, it is evident that a determined fight of this kind cannot be of long duration, and we can only express the hope that the insurance societies will see the wisdom of yielding before many months have passed.

ASSOCIATION OF CERTIFYING FACTORY SURGEONS.

Annual Meeting.

THE annual meeting of the incorporated Association of Certifying Factory Surgeons took place at the Grand Hotel, Manchester, on December 12th, under the chairmanship of the President, Dr. E. RAYNER, of Stockport.

The Honorary Secretary, Dr. W. F. DEARDEN, in presenting a report on the year's work, stated that the members who sent in abstracts of their annual reports accounted for nearly 300,000 examinations and over 8,000 rejections during the year, and that certificates qualified by conditions as to employment had numbered almost 6,000. Rejections had gone up from 1.1 per cent. in 1903 to 3.05 in 1912. There was still marked variation at different ages. The percentage of rejections for physical incapacity to examinations in children under 14, working half-time, was 3.25 per cent.; in young persons of 13, working full time, 2.75 per cent., and in young persons 14 to 16, working full time, 1.93 per cent. A little progress had been made with the Board of Trade in the matter of providing confidential information to local juvenile labour bureaux as to the class of employment for which rejected children and young persons should be considered suitable. The form this confi ential report should take had been decided upon, and supplies were being sent to factory surgeons in various districts. Owing to the fact that the Government had declined to pay the suggested notification fee of 1s. per case, the scheme had not been taken up with any enthusiasm by certifying surgeons as a whole. It was stated that the council of the association had agreed to act as a committee of organization for this country for the third International Congress on Industrial Diseases, which is to meet at Vienna in September next. The main business was the consideration of a report by a subcommittee on the conditions regulating the appointment and duties of certifying surgeons, and certain recommendations attached. In order that any recommendation sent in to the Home Office should represent the views of all certifying surgeons, members had been invited to give the freest possible criticism to the report of the Committee, and many who had not been able to attend had sent in their comments by letter. The main suggestions of the Committee were as follows:

1. Where possible, appointments should be made sufficiently remunerative, by absorption of vacant districts, to make the surgeon independent of private practice, and there should be promotion from one district to another.
2. That medical inspectors, of experience both in industrial hygiene and the special work of the certifying surgeon, should be attached to each superintending inspector's district, to supervise generally the work of the district surgeons, and to carry out scientific observations for the department.
3. That the certifying surgeon ought to be enabled to participate in a scheme of superannuation.
4. The certificate of fitness requirement should be extended to females up to 18 years of age and to young persons employed in mines.
5. The power to attach conditions to the certificate should apply to the individual as well as to employment, and no examination should be made elsewhere than the factory.
6. That the preliminary investigation made by the certifying surgeon into the causation of accidents is extremely useful, and that no hitherto suggested change in the system can compare with the present one for economy with efficiency.
7. The modern tendency of the Department to increase the obligations of the office, and at the same time cut down the surgeon's earning capacity by increasing the number of centres in his district, calls for a revision of the fees now paid, and the basis for certifying should be altered from 6d. to 1s.
8. The fee for examinations made under the Compensation Act should be increased and be made a charge against the insurance, and the certifying surgeon should be asked for his views when cases came before the medical referee.
9. When Departmental Committees are formed to consider matters appertaining to their office certifying surgeons should be represented on such bodies.
10. When regulations affecting the duties and appointment are under revision the Department might safely imitate the action of the Local Government Board in obtaining the views of those who have executive experience on any alterations suggested.

The officers for the year 1914 were elected, Dr. John Hedley of Middlesbrough becoming president and Dr. W. F. Dearden and Dr. T. Watts again taking on the duties of honorary secretary and treasurer respectively. The meeting was followed by the annual dinner.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Governors and General Council of King Edward's Hospital Fund for London made their awards for the current year to hospitals, convalescent homes, and consumption sanatoriums, at a meeting at St. James's Palace, on December 12th, the DUKE OF TECK being in the chair.

The Honorary Treasurer, Lord ROTHSCHILD, in presenting his report, stated that the sums received by the Fund up to December 6th amounted, after payment of expenses, to £150,692. Mr. Eckstein, one of the executors of the late Sir Julius Wernher, had told him that £265,000 would shortly be paid to the Fund from the deceased's estate, and that later on a further sum, bringing up the whole bequest to £465,000, would probably be forthcoming. The Fund could not look forward to receiving such large bequests very often, so the treasurer proposed that this windfall, together with the moneys received and to be received from the estate of the late Mr. Samuel Lewis, should be treated not as income like the ordinary legacies received by the Fund, but as capital, and invested permanently. Sir HENRY BURDETT also made his annual statement on behalf of the League of Mercy. Accounts had not yet been received from all the districts in which the League worked, but it seemed certain that it would be able to contribute the same amount as last year.

The Distribution Committee.

The report of the Distribution Committee, read by its chairman, Sir WILLIAM CHURCH, showed that there had been placed in its hands a sum of £151,000, while the number of hospitals applying for grants was 106 as against 104 last year. Although the total amount to be distributed remained as before, there were numerous, and in some cases considerable, variations in the grants recommended. This was because the grants were based on an examination of all the circumstances affecting the claims of each hospital each year in relation to those of other institutions, including the financial position of each of them as disclosed by their income and expenditure accounts and balance sheets for the last concluded year. Hence it must not be assumed that a reduction in the grant to any particular institution implied dissatisfaction with its work. With regard to St. George's Hospital, its authorities had rendered their accounts for the year 1912 in an amended form; this reduced the amount paid out of the general fund of the hospital to the medical school in respect of specific work done by it for patients to

a sum not exceeding that charged prior to the payment which led to the suspension of a grant from King Edward's Hospital Fund. Hence the Distribution Committee found itself in a position once more to recommend a grant to this institution. As for amalgamation schemes, progress had been made with that relating to the British Lying-in Hospital and the Home for Mothers and Babies at Woolwich, so it was recommended that £1,500 should be set aside towards this scheme. No grant towards throat, nose, and ear hospitals was recommended, since it was decided in 1911 that the sum set aside towards a general amalgamation of the five hospitals in question should remain at £20,500 pending agreement on a satisfactory scheme or schemes. The committee understood that a partial scheme was at present under consideration. The grant of £5,000 towards the King's Hospital Removal Fund brought up the total amount contributed to this object to £53,000. The committee desired once more to draw the attention of promoters of new hospitals to the advisability of their submitting their proposals to the Fund. Although it was true that in no circumstances could a grant be made to an institution which had not been in existence for at least three years, it was nevertheless desirable in the interests of any proposed new institution, as well as on general grounds, that the opinion of the Fund on the question of the necessity for a new hospital should be sought before, rather than after, any definite action had been taken.

Awards.

The awards recommended by the Distribution Committee and the Convalescent Homes Committee amounted together to £157,500—namely, ordinary grants to hospitals, £149,500; special grant set aside for the amalgamation of the British Lying-in Hospital and the Home for Mothers and Babies, Woolwich, £1,500; convalescent homes, £2,525; and consumptive sanatoriums, £3,975. Both committees prefaced their lists of awards by statements to the effect that the absence of a grant did not necessarily imply dissatisfaction with the institution concerned. The following items cover the principal hospitals, large and small, and show the ground on which, when stated, the awards were recommended or withheld:

Alexandra Hospital for Children.—£250, of which £50 to balconies.

Beckenham Cottage Hospital.—£25.

Belgrave Hospital.—£1,250, of which £500 to reduce building debt.

Blackheath and Charlton Cottage Hospital.—£150, of which £50 to new Nurses' Home.

Bolingbroke Hospital.—£1,000.

Central London Ophthalmic Hospital.—£750, of which £500 to equipment of new building.

Central London Throat and Ear Hospital.—No grant, for reasons stated in regard to the Hospital for Diseases of the Throat.

Charing Cross Hospital.—£5,500, of which £1,000 to redemption of mortgage debt and £1,500 to new free wards in accordance with the scheme submitted to the Fund.

Chelsea Hospital for Women.—£2,000, of which £1,500 to rebuilding in accordance with the scheme submitted to the Fund.

Cheyne Hospital for Sick and Incurable Children.—£50, in consideration of the fact that some curable cases are admitted.

City of London Hospital for Diseases of the Chest, Victoria Park.—£4,000, of which £500 to improvements subject to scheme being submitted to the Fund.

City of London Lying-in Hospital.—£500.

Clapham Maternity Hospital.—£2,100, of which £2,000 to reconstruction in accordance with the scheme submitted to the Fund.

Dreadnought Hospital.—£4,000, of which £500 to renewal of floors.

East End Mothers' Lying-in Home.—£200.

East London Hospital for Children.—£2,000.

Eltham and Mottingham Cottage Hospital.—£75.

Finchley Cottage Hospital.—£25.

Florence Nightingale Hospital for Gentlewomen.—£200.

French Hospital.—£100.

Friedenheim Hospital.—£75.

General Lying-in Hospital.—£200.

German Hospital.—£100.

Gordon Hospital for Fistula, etc.—£25.

Great Northern Central Hospital.—£5,000, of which £2,000 to reduce debt on general fund.

Grosvenor Hospital for Women.—£350.

Guy's Hospital.—£7,000, of which £1,500 to building improvements, in accordance with the scheme submitted to the Fund.

Hampstead General Hospital.—£2,750, of which £500 to reduce general fund debt and £500 in accordance with agreement upon amalgamation with North-West London Hospital.

Home and Infirmary for Sick Children.—£250.

Hospital and Home for Incurable Children, Hampstead.—£50, in consideration of the fact that some curable cases are admitted.

Hospital for Consumption, Brompton (including Sanatorium at Frimley).—£4,500.

Hospital for Diseases of the Throat.—No grant. Capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the throat, nose, and ear hospitals.

Hospital for Epilepsy and Paralysis.—£1,500, of which £500 to recent extension in accordance with the scheme submitted to the Fund.

Hospital for Sick Children.—£3,000.

Hospital for Women, Soho Square.—£2,000, of which £1,000 to reduce mortgage debt.

Hospital of St. John and St. Elizabeth.—£400.

Infants' Hospital.—£25.

Italian Hospital.—£200.

Kensington and Fulham General Hospital.—£25.

Kensington Dispensary and Children's Hospital.—£25.

King Edward Memorial Hospital (Ealing).—£550, of which £150 to provision of mortuary.

King's College Hospital.—£6,500, of which £5,000 to removal fund.

Leyton, Walthamstow, and Wanstead Children's and General Hospital.—£350.

London Fever Hospital.—£2,050, of which £2,000 to rebuilding of isolation block in accordance with the scheme submitted to the Fund.

London Homœopathic Hospital.—£600.

London Hospital.—£12,000.

London Lock Hospital.—£3,250, of which £1,100 to the Harrow Road Hospital, £500 to sanitary improvements at the Harrow Road Hospital, and £1,650 to enable the new hospital at Dean Street to be equipped and opened free of debt.

London Temperance Hospital.—£1,200.

London Throat Hospital.—No grant, for reason stated in regard to the Hospital for Diseases of the Throat.

Maternity Charity and District Nurses' Home, Plaistow.—£200.

Medical Mission Hospital, Balaam Street, Plaistow.—£350.

Memorial Hospital, Mildmay Park.—£50.

Metropolitan Hospital.—£3,000.

Middlesex Hospital.—£5,000, of which £500 to improvements.

Middlesex Hospital Cancer Charity.—£100.

Mildmay Mission Hospital.—£400, of which £100 to scheme for new lift.

Miller General Hospital for South-East London.—£2,500, of which £1,500 to extension in accordance with the scheme submitted to the Fund.

National Dental Hospital.—£300.

National Hospital for Diseases of the Heart.—No grant.

National Hospital for the Paralysed and Epileptic.—£3,000, of which £500 to reduce debt.

Nelson Hospital (late South Wimbledon, etc.).—£400, of which £200 towards completion of building.

New Hospital for Women.—£500.

Norwood Cottage Hospital.—£25.

Paddington Green Children's Hospital.—£500.

Passmore Edwards Acton Cottage Hospital.—£150.

Passmore Edwards East Ham Hospital.—£75.

Passmore Edwards Hospital for Willesden.—£25.

Passmore Edwards Cottage Hospital, Wood Green.—£50.

Poplar Hospital.—£400, of which £200 to new lift in accordance with the scheme submitted to the Fund.

Prince of Wales's General Hospital.—£4,500, of which £2,000 to reduce debt. The Committee are glad to observe the economical administration of this hospital, which they consider should receive more substantial support from the public.

Queen Charlotte's Lying-in Hospital.—£1,750, of which £1,000 to new out-patient department in accordance with the scheme submitted to the Fund.

Queen's Hospital for Children.—£3,250, of which £1,250 to reduce building debt.

Royal Dental Hospital of London.—£750, of which £500 to reduce building debt.

Royal Ear Hospital.—No grant, for reasons stated in regard to the Hospital for Diseases of the Throat.

Royal Eye Hospital.—£500.

Royal Free Hospital.—£5,000, of which £2,500 to rebuilding of out-patient department in accordance with the scheme submitted to the Fund.

Royal Hospital for Diseases of the Chest, City Road.—£1,250.

Royal Hospital, Richmond.—200.

Royal London Ophthalmic Hospital.—£2,250.

Royal National Orthopædic Hospital.—£3,000, of which £1,000 to reduce debt.

Royal Waterloo Hospital for Children and Women.—£1,250.

Royal Westminster Ophthalmic Hospital.—£50.

St. George's Hospital.—£3,000.

St. John's Hospital for Diseases of the Skin.—No grant.

St. John's Hospital, Lewisham.—£300.

St. Luke's House.—£25.

St. Mark's Hospital.—£400.

St. Mary's Hospital.—£5,500, of which £500 to reduction of general fund debt, and £500 to reconstruction of casualty department in accordance with the scheme submitted to the Fund.

St. Mary's Hospital for Women and Children, Plaistow.—£2,000, of which £1,500 to new nurses' home and out-patient department, subject to the scheme being submitted to the Fund.

St. Monica's Hospital.—£50.
St. Peter's Hospital for Stone.—£150.
St. Saviour's Hospital, Osnaburgh Street.—£150.
Salvation Army Maternity Hospital.—No grant. The new hospital was only opened at the end of October.
Samaritan Free Hospital.—£1,000.
Santa Claus Home.—£25.
University College Hospital.—£4,000.
Victoria Hospital for Children.—£800.
West End Hospital for Diseases of the Nervous System.—£350.
Western Ophthalmic Hospital.—£500 to reduction of debt on rebuilding of out-patient department.
West Ham and East London Hospital.—£3,500, of which £500 to recent improvements.
West London Hospital.—£5,000, of which £2,000 to new nurses' home, subject to the scheme being submitted to the Fund.
Westminster Hospital.—£3,500, of which £500 to reduce debt.
Wimbledon Cottage Hospital.—£100.
Woolwich and Plumstead Cottage Hospital.—£50.

Sanatoriums and Convalescent Homes.

The Convalescent Homes Committee reported that it had had placed in its hands a sum of £6,500, while the applications eligible for consideration amounted to 46 from convalescent homes, and 10 from consumption sanatoriums, the former number being an increase of 2 as compared with the previous year. In regard to the convalescent homes, the committee had adhered to its policy of giving special consideration to those closely connected with London hospitals, while it had continued its practice of making grants to sanatoriums on the basis of the reservation of a certain number of beds for the use of patients from London hospitals. In this way the committee had last year secured 39 beds; this year 44 beds had been secured at the same number of institutions—namely, 2 beds for children at the Maitland Sanatorium, Oxon.; 10 adult beds at the Devon and Cornwall Sanatorium; 10 at the Kelling Sanatorium, Norfolk; 10 at the Benenden Sanatorium, Kent; and 12 at the Northampton Sanatorium. Of these beds, 18 had been allocated to the City of London Hospital for Diseases of the Chest; 9 to the Royal Hospital for Diseases of the Chest; 6 each to the London and Guy's Hospitals, and 5 to the Middlesex Hospital. All the sanatoriums applying for grants had been duly inspected. The awards made to sanatoriums numbered 10, these varying from £25 in the case of the Daneswood Sanatorium for Jews, and £50 each in the cases of the Children's Sanatorium, Holt, Norfolk; the Evelyn Chest Hospital, St. Leonard's, and the Fairlight Sanatorium, Hastings, to £875 each in the case of the Devon and Cornwall Sanatorium, the Kelling Sanatorium, Norfolk, and the Sanatorium for Workers at Benenden, Kent, and £1,050 in that of the Northampton Sanatorium. The awards to convalescent homes numbered 40, but averaged much smaller amounts, these ranging from £25 to £50 in the case of most institutions to £150 in the case of the Metropolitan Convalescent Institution at Walton, and to £400 in that of the Convalescent Branch of the Middlesex Hospital at Clacton.

Letter from the King.

Before proposing the adoption of the reports the Duke of Teck read a letter addressed to himself as Presiding Governor of the Fund by direction of His Majesty, its Patron and Past-President. The letter congratulated the Council upon the progress made by the Fund during the past year, but pointed out that with the rise of prices and the increased cost of special treatments there must be a constant tendency for the needs of hospitals to become greater. The letter also conveyed His Majesty's thanks to the honorary and other officers of the Fund, and expressed regret at the retirement from its service of Sir Trevor Lawrence, and Mr. Danvers Power, who, in addition to initiating the statistical report, had been honorary secretary of the Fund for three years, and in other ways had long devoted himself to its interests.

Commenting on the contents of the various reports, the Duke of Teck pointed out that the treasurer's report was more satisfactory than last year, when, in order to keep the distribution total up to that for previous years, it had been necessary to draw a considerable amount from reserves. This year, though receipts from donations had somewhat fallen off, annual subscriptions showed an increase, and the estimated income from investments a considerable increase; furthermore, receipts from legacies were once more up to the average of the past five years, instead of below it as in 1912. All would welcome St. George's Hospital back to the list of grantees. It had, he hoped, always been understood by the public that the Fund suggested no want of good faith on the part of the authorities of St. George's Hospital. The difficulties between the Fund and them arose solely because the former was bound by a special trust in the matter of the financial relations of hospitals and medical schools. It was quite natural that those who had not had the responsibility of carrying out that trust, and who had not had the long experience of the Council in applying it impartially to the different circumstances of many different hospitals, should sometimes fail to realize the standpoint from which the Council was bound to approach any particular case. As for consumption sanatoriums, there was no doubt that, whatever the future might bring forth in the way of public machinery for dealing with tuberculosis, the demands on the voluntary hospitals for the treatment of consumption in its early stages were still most pressing. The statistical report, which had been issued as usual this year, showed a general increase in hospital expenditure, which was in some cases due to causes common to all hospitals. Since the publication of the revised system of hospital accounts seven years ago, certain minor differences in applying the rules of that system had grown up, and in consequence some supplementary regulations and suggestions had been issued by the Fund.

The reports were then adopted, the meeting ending, after formal resolutions relating to the delegation of the powers of the Council to the various committees had been passed, with a vote of thanks to the Duke of Teck for presiding.

SCIENCE NOTES.

AT the Brussels Congress of Radiology and Electricity in September, 1910, an international committee was appointed to fix an international standard of radium. This committee met in Paris in March, 1912, when a standard prepared by Madame Curie was compared with another independent standard prepared in Vienna by Professor Hönigschmidt. The two standards were found to agree well within the limits of accuracy of measurement. The measurement was made by means of the penetrating gamma rays, and Professor Rutherford, in a note in a recent issue of *Nature*, observes that the fact that independent measurements agreed so closely is a striking testimony to the accuracy of the method. The standard prepared by Madame Curie has been deposited in the Bureau du Poids et Mesures at Sèvres, near Paris; that prepared by Professor Hönigschmidt is in the custody of the Academy of Sciences in Vienna. The standards will not leave these resting places, but arrangements were made to allow governments to obtain duplicates, and the Austrian Government undertook to provide the radium required at a considerable reduction of price. Six governments have now obtained duplicate standards, and the National Physical Laboratory in this country has announced that it is prepared to standardize preparations of radium and mesothorium, but will for the present confine itself to undertaking the standardization of strong preparations only. The National Physical Laboratory and the Charlottenburg Reichsanstalt will both express the activity of preparations in terms of metallic radium and not in terms of bromide or chloride. This decision Professor Rutherford commends on the ground that it is more definite and scientific to express the results in this form, and he adds that it is very desirable that all radium should be bought and sold in terms of metallic radium, thus avoiding the uncertainty that sometimes arises as to whether the preparation is being sold as anhydrous radium bromide, or radium bromide with its water of crystallization. The standard prepared by Madame Curie consists of 21.99 mg. of radium chloride, and its cost was therefore considerable. This difficulty was generously met by Dr. Beilby, F.R.S., and his wife, who as a personal tribute to Madame Curie and her work defrayed the cost of the radium forming the international standard, and thus relieved the International Committee from the necessity of collecting special funds for the purpose. When it was determined to obtain a duplicate standard to be placed in the charge of the National Physical Laboratory at

Teddington, Dr. Beilby again generously agreed to defray the expense of the British standard, which contains about 20 mg. of pure radium chloride.

Some interesting, though to a certain extent inconclusive, experiments on the sterilization of milk by an electrical method were described recently before the Roentgen Society by Professor W. G. Duffield. Working with Mr. T. Murray he had followed the plan of submitting samples of milk to the passage of electrified gases, and noting at intervals of hours the rate at which acidity developed, as compared with the same phenomenon in an untreated sample. An induction coil was used for this purpose, and air or nitrogen (filtered through cotton-wool in certain of the experiments) was made to convey the products of the spark discharge into the milk. Considerable differences were perceptible when the curves of acidity for the treated and untreated samples were plotted out. The acidity of the treated sample appeared quickly to reach its maximum and then to remain stationary, whereas the acidity of the control ran up rather rapidly in a period of fifty hours. Professor Duffield suggested that the effect in the case of the treated milk might be due to the killing of some of the spore bearers, so that the acidity ceased to increase. A typical comparison may be given in which the electrical discharge had run for fifty-two minutes:

Hours.	Acidity of Control.	Acidity of Treated Milk.
0	2	2
16	2.1	2
40	2.8	2.1
64	9	5.9

The acidity expressed in numbers of cubic centimetres of alkali necessary to produce neutralization in a certain quantity of milk.

With very short exposures, such as one or five minutes, the difference was much less apparent. The acidity of the control and of the treated sample in one instance were tested after 120 hours, when they were found to be approximately equal. The exact cause of the reduction or, more properly perhaps, the retardation of the acidity, was not determined, either in the communication itself or in the subsequent discussion. Was the action on the milk due to chemical products, or was the milk affected by the ionized particles themselves? Various experimental attempts were made by the investigators to solve this problem, and these, so far as they went, appeared to indicate that the chief agent was chemical and not electrical. The aid of a skilled bacteriologist was called in to ascertain the actual extent of the inhibitory action on the growth of the bacteria, and his examination of the samples showed that there was a marked diminution in the number of germ colonies in the case of the treated milk; it was concluded that a very large number of the organisms were destroyed, and the germicidal or toxic influence, whatever its precise nature might be, seemed to remain in evidence (according to the most recent experiment) for at least five days after exposure to the discharge. The subject elicited an interesting discussion, several speakers inquiring whether there was scientific basis for the popular idea that a thunderstorm soured the milk. Professor Duffield said that his experiments pointed in the opposite direction so far as the electrical conditions were concerned; but temperature effects, of course, had to be considered.

Various observers from time to time have recorded the presence of acid-fast bacilli in the stools of tuberculous patients, some maintaining that they exist in the faeces only when present also in the sputum, while others maintain that they may be present in the former and yet absent in the latter. But some doubt has been expressed whether these acid-fast bacilli are really in many cases tubercle bacilli, for such organisms have been found even in tap water. Laird, Kite, and Stewart (*Journal of Medical Research*, October, 1913) have investigated the question by cultural and experimental methods, and have found that in practically all cases in which tubercle bacilli exist in the sputum they can be found also in the faeces, though they may be present in a few cases in the latter only. They come there probably from swallowing the sputum, or more rarely from tuberculous ulceration of the intestinal wall, though a conveyance from the blood stream cannot be excluded.

LITERARY NOTES.

MESSRS J. AND A. CHURCHILL will publish almost immediately the *Medical Directory* for 1914. It was in 1844 that Mr. John Churchill, the grandfather of the present partners of the firm, issued the first of the series. To celebrate its seventieth birthday the publishers have printed all names and addresses in black type. It is believed that this will facilitate ready reference.

Messrs. George Routledge and Sons, Ltd., will publish in January, 1914, a *Handbook of Photomicrography*, by H. Lloyd Hind, B.Sc., F.I.C., and W. Brough Randles, B.Sc., Lecturer in Biology, Derby Technical College, with 44 plates, comprising 8 three-colour reproductions of direct colour-photomicrographs and 85 half-tone reproductions of photomicrographs, and 71 text illustrations. The book is the outcome of a series of articles originally published in the *Photographic Monthly*, and is intended as an introduction to photomicrography from a photographic point of view.

Dr. Raymond Crawfurd, author of *The King's Evil* and *The Last Days of Charles II*, has written an historical survey of *Pestilence in Literature and Art*. The book will be published by the Oxford University Press.

The Christmas number of *Truth* reviews the events of the year in a satirical vein. The part that will most interest our readers describes the great fight between St. George and the Dragon, the Phthisiconsumptiosaurus. St. George's plan was to catch a sufficient number of leeches, which he was to place in the "mammoth four-poster" that served the monster as a bed—

> That when he comes in and to bye-bye he goes
> The leeches might suck him while lapped in repose.

When he carried his pot full of leeches into the dragon's bedroom and turned them out on the ground a surprise awaited him, for—

> Stooping to pick 'em up, lo, and behold!
> A sight that first made him grow hot and then cold!
> For the whole blessed lot
> Were scarce out of the pot
> When up on their little hind tails they all got.
> And when he said, "What
> Do you mean by this rot?"
> Their reply almost caused him to faint on the spot.
> "You took us and in that there jam-pot confined,
> The duty of sucking to us you assigned
> Without ever asking us if we should mind!
> Or saying, 'Pray, will you?' or 'Please be so kind,'
> And further than that, you the check had to bet about it,
> And we don't mean, we promise, to let you forget about it.
> In short, we have struck;
> The whole thing we chuck;
> And nothing on earth shall induce us to suck."
> "You won't?" gasped the Saint, turning pale at the gill.
> "No," answered the leeches; "we're blest if we will!"

It was an awkward position, but St. George's ingenuity did not fail him. For:

> The kitchen he rummaged, nor long was at fault,
> For he quickly came back with a big box of salt;
> Which was no sooner done
> Than each mother's son
> Of the leeches came down off his tail with a run.
> You could, in the circumstance, naught else expect on 'em;
> Salt has such a horrid, upsetting effect on 'em.
> The Saint, quite believing he'd got 'em in hand
> And that none of them now would his wishes withstand,
> Picked them up off the floor, uncovered the bed first,
> And next, one by one, dropped the leeches in head-first.

The plan of bleeding did not altogether succeed, for the leeches "bungled their job," but St. George slew the monster all the same. This may be prophetic, but it might have been history had St. George condescended in the first instance to take counsel with the leeches as to his plan of campaign. The issue, as usual, contains a number of illustrations, coloured and plain, all of topical interest.

Mr. George Ives has written a *History of Penal Methods*, in which he has embodied the fruits of many years' research. He reviews the subject from the primitive ideas of the Middle Ages down to the present day. The work, which includes chapters on the witch trials, treatment of the insane, and on the sources of crime, as well as its prevention and cure, will be published by Messrs. Stanley Paul.

British Medical Journal.

SATURDAY, DECEMBER 20TH, 1913.

BULLET WOUNDS OF ARTERIES AND THEIR RESULTS.

ALTHOUGH the civil surgeon has few opportunities of meeting with bullet wounds of arteries, they are an interesting subject of clinical study, and Mr. Makins, when shortly after his return from the South African war, he published his surgical experiences, naturally had much to tell of the immediate and remote effects of these wounds. In the Bradshaw Lecture, which will be found in this issue, he brings the matter completely up to date, and discusses the many interesting problems which arise in connexion with it.

There have been changes in the shape of the rifle bullet since 1900. The bullets used in the Balkan wars were longer, narrower, and more pointed than those used in the South African war, and it is obvious that the character of the injuries must be different. The chief features in the wounds of vessels produced by bullets of small calibre are lessened liability to external secondary haemorrhage, and the greatly increased frequency of the development of some form of aneurysm. These peculiarities are to be attributed partly to improved surgical treatment and partly to the narrow clean track of the bullet. It is a primary rule in surgery that the bleeding vessel should be secured as soon as possible after the injury. In military surgery this rule cannot be generally applied and an anomaly in surgery thus arises. Mr. Makins is led to discuss the methods by which Nature controls the bleeding from arteries thus injured. The vessel may be occluded primarily by provisional thrombus, and the wounds in the vessel may cicatrize. This has been observed *post mortem* in the superficial femoral fifteen days after injury in a case in which the patient died of enteric fever, and in the abdominal aorta in a case in which the patient died seventy days later from subphrenic abscess. Adhesion of the vessels and nerves may provide another means of occlusion. Spontaneous cure may be the end result of haematoma due to injuries to arteries, contraction to form circumscribed traumatic aneurysms ensuing and, eventually, consolidation. Development of pure aneurysmal varix is regarded by Mr. Makins as another of Nature's methods of cure; it is a permanent arrest of haemorrhage by a spontaneous process of healing. Here the channel of communication is lined throughout by intima.

The difficulties of treatment are considerable. Primary ligature is the only operation which can be performed on the field, and it is limited to cases in which haemorrhage is endangering life. The results of primary suture of the injured artery have so far not given much ground to hope that this method of treatment, which may be considered the ideal, can be applied, chiefly because of the length of time which must elapse before the patient can be brought to a hospital where an operation demanding such delicate manipulations is possible, and also because of the nature of the injury to the wall of the vessel and the accumulation of blood clot around it.

In military surgery the treatment of secondary results of wounds of arteries is of chief moment. That is to say, not the wound of the artery itself but its sequela—arterial haematoma, traumatic aneurysm, arterio-venous aneurysm, or aneurysmal varix—has to be dealt with. Arterio-venous aneurysm is a surgical condition known from antiquity, but it has been enormously increased in frequency in modern times by the employment of the small calibre bullet. Mr. Makins discusses five methods of treatment, each of which has its own suitability. His general conclusion is that progress in the branch of military surgery concerned with arterial wounds by bullets of small calibre is in the direction of greater conservatism and more watchful expectancy—an experience similar to that with regard to injuries caused by the same agents in bones and nerves and in the abdomen.

The end results of some cases of injury of artery and vein producing aneurysmal varix are narrated by Mr. Makins in the second edition of his book, recently published.[1] He points out that the most striking feature in these injuries is their remarkable effect in disturbing the even flow of the circulation. The pulse may be irritable and rapid—120 to 140 a minute. In a case of carotid arterio-venous aneurysm the simultaneous occurrence of laryngeal paralysis pointed to injury of the vagus; but this paralysis disappeared in due time, and the rapid pulse persisted for at least a year, varying in rate from 110 to 130, showing that the vagus injury was not the cause of the irritability. The acceleration of pulse was observed by Mr. Makins to be present in injuries far distant from the vagus; in a femoral aneurysm the rate was 120, in an axillary varix of twenty years' standing the rate varied from 110 to 120, according to the position of the patient. He suggests the possibility that the irritable circulation recognized hitherto as a predisposing cause of spontaneous aneurysm may require to be regarded as an effect of the condition.

Five cases of arterio-venous aneurysm are described by Mr. Makins in some detail, and with notes of their after-history. Even in large aneurysms localization and shrinkage of the sac was striking, and this may be regarded as the preliminary step to consolidation and cure. It occurred satisfactorily in three cases; in the other two death was the final result; in one case four years after the original injury from bursting of the aneurysm; in the second ten years after the injury during operation for distal ligature of the common carotid. All five cases might reasonably be regarded as successful, as even in the fatal cases death occurred late. That cure may take place without operation, as in two of the cases recorded, is a very remarkable fact.

THREE GREAT EXPERIMENTS IN REPRODUCTION.

Now and again large social movements have taken origin and have even gained considerable impetus before the community in general has fairly realized that they exist; the more or less underground workings of the life of the body politic are not always immediately reflected in the newspapers of the day; some events arrive unheralded. It has been so in large measure with the causes underlying the phenomenon of the falling birth-rate. Controversy has not yet finished its discussion of the nature of these causes; from some points of view it can hardly

[1] *Surgical Experiences in South Africa, 1899-1900.* By George Henry Makins, C.B., F.R.C.S. Second edition. London: H. Frowde and Hodder and Stoughton. 1913. (Med. 8vo, pp. 520; 28 plates, 10 figures, 6 charts. 10s. 6d. net.)

be said to have well begun to consider them, far less to classify, collate, and critically compare them. Nevertheless, there is probably no one who will deny that one of them, at least, is the practice of voluntarily limiting the number of births which take place in married life. The means employed doubtless varies within wide limits, reaching on the one hand from an exaggeration of self restraint or continence in matrimony which is reminiscent of the celibatic asceticism and austerities of the anchorites of the Middle Ages to the simple and easy use, on the other hand, of the check, physiological, physical, or chemical; but the fact remains that, as a speaker recently put it, in some remarks made at a conference in Edinburgh on the falling birth-rate,[1] the human race has now begun an experiment upon its reproduction similar to those which it has in times past made upon its digestion and other bodily functions. No one can tell what effects this quiet, concealed, and yet widespread and persistent experimenting will have; some will say one thing and others another, and possibly the Commission which is now sitting in London upon this subject will be able to declare in which direction the general stream of opinion is flowing; but it cannot be denied that a somewhat ominous darkness obscures the whole outlook, and that thinking men, having regard to France, and noting the longer delayed but now more rapid descent of the birth-rate in our own country, entertain the gravest apprehensions for the future—apprehensions which are no less grave because they cannot be formulated in precise terms. Civilized mankind has embarked upon a perilous voyage, without a compass, and with hardly a clear notion regarding its desired haven.

But the falling birth rate represents only one of at least three experiments upon its reproduction which the human race is making or is preparing to make at the present time. There is the eugenic ideal, the somewhat visionary and elusive if most desirable Utopia of the future, peopled with the chosen descendants of the properly mated "fit" persons of the present generation; but the trouble is what to do with the "unfit." Are we to revert to "the method of Genesis—the Flood," and by sterilization and segregation stop the arrival of the undesirable? Are we, on the other hand, to put our trust in the slow methods of social reform and rely upon the persistent impact of healthy surroundings upon the tough fibre of hereditary tendencies? It is hard to see how a people which refuses to vaccinate its babies at word of hygienic command will lightly accept the sterilization and segregation of its "unfit," or will, for that matter, receive the eugenist's classification of his fellow mortals into flowers and weeds, fit and unfit. The other alternative is less difficult of acceptance; but then unfortunately the reclamation of the unfit goes so slowly, has so little to show, that the longing for the nobler race passes into the imperative mood, whilst the outcry against "breeding our manhood from the shotts" grows louder. The ordinary man, with no special propaganda or cult to bias his thought, says: Let us go on with the method of healing; let us still try at least to make the homes hygienic, the surroundings clean both in the physical and moral sense; and let us give the little unfit one when he arrives the benefit of the doubt, for after all he may be the carrier of some stray streak of a healthful righteousness in his complex germ-plasm, and may turn out to be valiant in fight against heredity.

The third experiment to which the human race may now be said to stand pledged is that which has been called "antenatal hygiene." Antenatal hygiene stands over against and, so to say, in opposition to antenatal pathology; and the two together constitute the whole of our knowledge of health and disease before birth. In his *Manual of Antenatal Pathology and Hygiene*, which appeared some ten or eleven years ago, Dr. Ballantyne gave, it is true, comparatively small space to hygiene; but events have happened in these years—prematernity work has been commenced in Edinburgh, a prenatal health campaign has been organized in Boston, and beneficent "endo-uterine puericulture" has been set agoing in France—and the inquirer is now in a much better position to fill in the details and to estimate the hopefulness of attempts which have as their aim the making of the surroundings of the unborn infant healthy and health-giving. The environment of the unborn infant is his mother; from the moment of impregnation the new being can receive no more from his father either of good or ill, but in the following nine months he can receive much from his mother both of good and ill. The health reformer, therefore, sees in this fact the promise, upon a large scale, of an experiment in reproduction, and he looks forward hopefully to the improvement in the health of the infant at birth which must follow upon the making of his antenatal maternal environment all that it ought to be. He will look to the expectant mother's diet, will give her bodily and mental quiet or that degree of exercise which shall be for the best, will quickly and effectively treat any of the disorders (great or small) which arise in the term of her expectancy, will check even the beginnings of evil, and then he will look confidently forward to the birth. His dream, nevertheless, may not come true, and that for two reasons: he may find an hereditary strain towards disease which is too strong to be conquered even in the more plastic body of the embryo and fetus—a rigid Weismannism rears "its horrid front" against him, and he may discover that he has only succeeded in giving the power of survival to an hereditarily "unfit" being; or he may have the conclusion forced upon him that the laws of antenatal hygiene and of the physiology of pregnancy are more complex than he had thought, and that even parents of good heredity, living in hygienic surroundings, free from vices, with tissues not in the receipt of racial or individual poisons, and suffering from no maladies, may yet have a poorly nourished and weakly progeny, or, happily, he may encounter the very opposite. He must not, however, take discouragement either from the one side or the other.

It is just possible—although we are laying ourselves open to the charge of heresy from some quarters in saying so—that the laws of heredity may not be so rigid as Weismannism will have it, and that the unalterable germ-plasm, like the indivisible atom, may have surprises in store for us; and it is more than possible—it is highly probable—that a study of the life before birth in all its complex maternal and fetal interactions may discover circumstances and laws which explain the failures, and show us how they may be converted into successes.

[1] BRITISH MEDICAL JOURNAL, vol. ii, 1913, p. 1168.

Dr. KNAPP, who is leaving Lucan, was recently entertained to dinner by a number of friends. Mr. J. L. Seallan presided, and in presenting Dr. Knapp with an address expressed the regret felt throughout the district at his departure, and wished both him and Mrs. Knapp all success. In replying Dr. Knapp expressed his thanks for the presentation, and for the kindness and goodwill extended to him during his stay in Lucan.

SIR JOHN WILLIAMS.

THE Honourable Society of Cymmrodorion, founded in 1751 "for the encouragement of literature, science, and art as connected with Wales," held its annual banquet in London on December 12th, and among those especially honoured was a distinguished member of the medical profession whose patriotic generosity has made his name a household word in the Principality. The awards were announced in a few well-chosen words by Sir Vincent Evans, secretary of the society, and the presentations were made by Lord Pontypridd. The Cymmrodorion Medal was instituted many years ago "in recognition of distinguished services rendered to Wales in connexion with literature, science, and art," but until the festival last week had been conferred upon two persons only—the late Reverend Dr. William Rees (*Gwilym Hiraethog*), a well-known divine, publicist, and orator; and the late Reverend Dr. Daniel Silvan Evans, a learned lexicographer and antiquary. On December 12th it was conferred on three other Welshmen, in recognition of their distinguished services to Wales—the Right Hon. Sir John Rhys, M.A., D.Litt., Professor of Celtic, and Principal of Jesus College in the University of Oxford, for his labours in many fields of activity for many years, and, in particular, in recognition of his contributions to Celtic research and learning, and his devotion to the cause of Welsh education; Sir John Williams, Bart., G.C.V.O., M.D., for his work for Wales, and in particular for his generous endowment of Welsh learning, and his encouragement of Welsh literary research in connexion with the National Library of Wales; and John Edward Lloyd, M.A., Professor of History, and Registrar of the University College of North Wales, for his standard work on the *History of Wales to the Edwardian Conquest*, and other contributions to Welsh history. Unfortunately, Sir John Williams was prevented by indisposition from attending to receive the medal, but those present, who numbered several hundred, gave cordial expression to the pleasure with which they heard the announcement, and Mr. Llewellyn Williams, K.C., M.P., correctly interpreted their feelings when he spoke of Sir John as "the beloved physician, who, after a career of superlative excellence in his profession, has returned to his native land to enrich her with the splendour of his literary treasures, and still more, with the example and the inspiration of his pure patriotism." The medal, a highly artistic and beautiful piece of emblematic work, was designed by Joseph Edwards, a mystic sculptor whom Wales has forgotten to honour as he deserved.

STATUES OF JENNER IN ENGLAND.

WE have received from Mr. J. Arden Thomas, of Cheltenham, a copy of a short account of the life and work of Edward Jenner, contributed by him to the *Pharmaceutical Journal* of October 18th. Most of Mr. Thomas's information has, he says, been obtained from Baron's *Life of Jenner*. This makes it all the more remarkable that, in referring to the fact that Jenner's discovery was received with indifference and even with active hostility, he should state that "even his friend, Dr. Hunter, was opposed to it and gave Jenner little or no encouragement." In Baron's work (London, 1827, vol. i) the following passage occurs at p. 124: "As has already been stated, Jenner went in 1770 to prosecute his studies under Mr. Hunter. Among other subjects of interest which he carried with him from the country and which he repeatedly mentioned to his teacher was that of cow-pox. Mr. Hunter never damped the ardour of a pupil by suggesting doubts or difficulties. On the contrary, as was usual with him on all occasions when the matter in hand admitted it being brought to the test of experiment, he advised that *trial* should be made, and that accuracy and faithfulness should guide the investigation. In cases of this kind he would say, 'Don't *think*, but *try*; be patient, be accurate.' In language such as this he incited all who came within the sphere of his influence to cultivate their art, and his own example most fully accorded with his precept. It does not appear that his mind was ever so fully impressed with the probable consequences of the successful elucidation of the subject of cow-pox as Jenner's was. This, perhaps, is not to be wondered at, considering the extent of his occupations and the great number of original and important pursuits which fully engrossed his attention. He certainly, however, made known Jenner's opinions and the traditions in Gloucestershire both in his lectures and to his friends in conversation; and other lecturers on his authority mentioned them to their pupils." This, at any rate, shows that Hunter was not "opposed" to Jenner's discovery. Mr. Thomas is also incorrect in his conjecture than "Perhaps the only memorial to Dr. Jenner in England is his statue erected by public subscription in Gloucester Cathedral." Besides this there is the bronze statue by Calder Marshall, R.A., mentioned by Baron (op. cit.); it was removed from its original site in Trafalgar Square to Kensington Gardens in 1862. The cost of this statue was defrayed by public subscriptions raised by a committee of which Dr. Conolly was chairman. It was unveiled by the Prince Consort in May, 1858. The statue by Sievier which stands at the west end of the nave of Gloucester Cathedral was also erected by subscription. There are two busts—one by H. Corbould, a drawing of which forms the frontispiece of Baron's book; and one by S. Manning. There is also a memorial window in Berkeley Church with the following inscription: "The east window in the chancel was erected October, A.D. 1873, by voluntary subscriptions to the memory of the late Edward Jenner, M.D., the discoverer of vaccination, who was born in this parish A.D. 1749 and died at the Chantry, Berkeley, A.D. 1823, and was interred in the north-east corner of the chancel." It was proposed that Jenner should be buried in Westminster Abbey. This proposal, however, came to nothing, although, in the words of Mr. Secretary Peel, "there was every disposition on the part of the Government to honour the memory of the distinguished individual in question, and it was only out of respect to the wishes and feelings of his relatives that he had not been publicly interred in Westminster Abbey." This cryptic utterance seems to be an official way of saying that it had been intended that the cost of the funeral was to fall, not on the public, as the words might seem to imply, but on the family. Mainly for that reason they declined the proposal. Reproductions of the statue in Kensington Gardens and of the memorial window and tablet in Berkeley Church were published in the Jenner Centenary Number of the BRITISH MEDICAL JOURNAL of May 23rd, 1896. In that number a long list of portraits, medals, diplomas, and other testimonials of the honour in which Jenner was held is given. We fully agree with Mr. Arden Thomas, however, that "probably only a small percentage of the English population realize the importance and lifelong protection which they receive when they undergo their first small operation in infancy."

THE RATIFICATION OF THE INTERNATIONAL OPIUM CONVENTION.

IN articles which appeared in the JOURNAL on July 19th and October 25th last the then position of the international endeavour to suppress the abuse of opium, morphine and cocaine was fully explained. The Second International Opium Conference, held at the Hague last July, took steps whereby the thirty-four Powers there represented were to urge the dozen or so abstaining Powers to sign the Convention, and it was unanimously resolved that, in the event of such signature by all the then outstanding Powers not having been obtained by December 31st next, the Netherlands Government should be requested to invite all the

signatories to send representatives to the Hague to consider, not the question of ratification, but of putting into force the Convention of January, 1912. It will be remembered that the Conference of last July had been summoned in accordance with Article 23 of the International Convention in order to consider whether, inasmuch as all the Powers had not then signed, ratification of the Convention might nevertheless proceed. It was there and then resolved that such signatory Powers as were ready to deposit their ratifications might forthwith proceed to do so, and we understand that several deposits have in fact been made at the Ministry for Foreign Affairs at the Hague. The declaration made by Great Britain postponing ratification until certain named Powers should have signed was received with some degree of disappointment. It was understood from the statements made by the British plenipotentiaries, Mr. Max Müller and Sir William Collins, that if and when Norway and Sweden, Switzerland, Austro-Hungary, and Peru signed the Convention Great Britain would feel that the moment for ratification of the Convention by her had arrived, and that until then the postponement of ratification by Great Britain might be more influential in achieving the ultimate object in view. We now learn from the Netherlands that since July Uruguay, Peru, Norway, and Sweden have affixed their signatures, and that Switzerland, Austro-Hungary, and Montenegro have declared their willingness to do so. The only remaining Powers are, we believe, Bulgaria, Greece, Servia, Roumania, and Turkey. The Balkan States were not, we gather from the discussions of the second conference, which have now been issued, deemed to be of cardinal importance, and it is clear from the debates of the first conference in January, 1912, that ratification was not to be postponed until each and every invited Power had come in. We venture to think that the time has now arrived, and the required conditions have been fulfilled, to permit Great Britain to proceed forthwith to ratify the Convention which her delegates were so largely responsible for drafting. Such action, without awaiting the date fixed by the last conference for a further review of the situation, would, we feel sure, bring satisfaction to those Powers and persons who were somewhat disappointed at her attitude last July, and would hasten the time when effective international control shall be placed on the growing use for illicit and non-medical purposes of these habit-forming drugs.

DIAGNOSTIC INJECTIONS OF TUBERCULIN.

IN this country there is at present great difference of opinion as to the advisability of injecting tuberculin hypodermically for the purpose of diagnosis. Even those who employ this method do not always agree in the matters of technique and the interpretations of the various reactions. A referendum has lately been taken by the Viennese weekly journal, *Medizinische Klinik*, which has addressed the following questions to numerous authorities: (1) What diagnostic conclusions do you draw from a positive reaction to tuberculin given subcutaneously? (2) Up to what limits (1 mg., 5 mg., and 10 mg.) do you consider the reaction as indicating early active tuberculosis? (3) Have you had experience of errors of diagnosis, particularly a positive reaction in cases of inactive and healed tuberculosis, in cases of hyperthyroidism, and exogenous or endogenous psychopathies? The answers to these questions, published on November 23rd, reveal conflicting views. Several physicians and surgeons answered that they had given up the subcutaneous method, or that they employ it in a few cases only. Others, though practising this method, were much at variance in their estimate of the dose which should distinguish between active and "cured" tuberculosis. Professor Fraenkel (Berlin) considered that a positive reaction was convincing evidence of tuberculosis, although the site of the disease could not then be determined unless the diseased organ showed a focal reaction. Early and active tuberculosis could, he believed, be diagnosed when the reaction to quite small doses, of $\frac{1}{3}$ to 1 mg., was positive. He usually began the test with $\frac{1}{3}$ mg., and repeated this dose in four to six days. In this way a reaction was often provoked owing to the first injection having increased the patient's susceptibility to tuberculin. He did not think he had ever been misled by the reaction. Professor Gerhardt (Würzburg) answered the first question more cautiously. In his opinion a positive reaction in a suspect probably indicated tuberculosis. He had, however, seen a case in which a positive reaction was not confirmed by any demonstrable macroscopic tuberculous lesion at the necropsy. Professor Schultze (Bonn) stated that he did not practise the subcutaneous method, preferring von Pirquet's. He had lately treated a case of pulmonary tuberculosis with therapeutic injections of minute quantities of old tuberculin. The febrile reaction provoked persisted till the patient's death. As this showed that small quantities of tuberculin might be fatal, the administration of large doses for diagnostic purposes was, he held, strongly to be deprecated. Professor O. de la Camp (Freiburg) stated that his practice was to give subcutaneous injections of Rosenbach's tuberculin in doses of 0.2, 0.4, 0.6, and 0.8 c.cm., and expressed his belief that in the 500 cases thus tested he got a positive reaction only in the presence of active disease, and that he had not hitherto been misled. Professor Ortner (Vienna) did not consider a general reaction to tuberculin irrefutable evidence of active tuberculosis, but considered a focal reaction to be in most cases a sign of active disease, though even a "focal" reaction might mislead in a case of pulmonary tuberculosis complicated by nephrolithiasis, the tuberculin inducing haematuria and renal pain. Professor Staihelin (Basel) regarded a focal reaction as indicating tuberculosis. When an injection provoked fever only, the patient was probably tuberculous, and when suspicious signs appeared in the lung it was probably the site of tuberculosis. Professor Neisser (Stettin) stated that he looked on a violent reaction to 0.1 or 1 mg. as a sign of early active tuberculosis. Most of his cases of inactive "cured" tuberculosis gave a moderate reaction to 5 mg. and over; but this also happened in many cases in which there was no suspicion of tuberculosis, and also in cases of hyperthyroidism and in certain psychopathies. He considered that the reaction might be misleading in various circumstances, particularly when the temperature was already not quite steady and the patient was weak. He also regarded the distinction between active and inactive tuberculosis as very difficult. Professor Stadelmann (Berlin) advised great caution in the interpretation of a rise of temperature. Not every slight rise was conclusive, and the various tuberculins do not act alike. Only when the temperature rose to over 101.3° F. did he consider it proof of tuberculosis. He held that diagnostic injections of tuberculin should be limited to obscure cases in which the disease was slight, and considered the method unsafe even when the first injection contained only 1 mg. Rest in bed, close observation, and a record of the temperature every two hours were in his opinion essential; he protested emphatically against diagnostic injections in out-patient practice. It is thus evident that the diagnosis of tuberculosis by tuberculin is at present regarded by many of those best qualified to judge as dangerous and uncertain.

DIETARY OF THE ANCIENT HEBRIDEAN.

AT a recent meeting in Edinburgh of the Society of Antiquaries of Scotland, the results of an expedition organized by Mr. A. Henderson Bishop and Mr. Ludovic Mann, Glasgow, last summer, by permission of Lord Strathcona, to elucidate various problems connected with

one of the most distant horizons yet discerned in Scotland, were presented. It had long been suspected that on the west shores of Scotland traces could be detected of a civilization which existed somewhere between the later phases of the older Stone Age and the earlier phases of the younger Stone Age—that is, between the Palaeolithic and the Neolithic periods. With the exception of two isolated relics, England, Wales, and Ireland had yielded no vestiges of that interesting "overlap" period. A few sites, however, had been detected in the Hebrides, and two, if not three, on the mainland of Scotland. This demonstrated that there was no hiatus or break in the continuity of the human occupation of the British Isles since Palaeolithic times. The island of Oronsay was selected for the operations of the expedition, as it was thought likely to offer the richest field for investigation. A large quantity of the material taken from the sites is at present under examination by specialists at South Kensington. The dietary of the Oronsay man was lavish and varied—much more so than that of the average present-day Britisher. The report of the botanists had not yet been completed, and the vegetarian tastes of these Hebrideans had not yet been clearly brought out. Hazel nuts occurred plentifully in the kitchen refuse. Some twenty-four species of molluscs were apparently gathered and eaten, and some dozen species of fish stocked their larder. Of wild fowl the ancient Hebridean had an abundance, including the extinct great auk. It was remarkable that on Oronsay traces of feasts on the flesh of swine and red deer had been found. This meant that the Oronsay hunter followed the chase on the larger islands, if not on the mainland, at a distance of many miles across the water from his own island. The characteristic weapon of the period was the flat-headed harpoon of bone or horn, with several barbs. And yet, of the many hundreds of his implements which had been discovered, there was not one at all suited to the excavation of canoes from a single log. Perhaps, therefore, his vessels were made of skins stretched on frames of wickerwork. It was likely, then, that the coracle type of craft preceded in the British area the dug-out canoe. It was clear that he lived a communal life, and traces of post-holes gave some indication that his dwelling-house was a kind of wigwam or cave-like structure erected against the face of sloping ground. Everything pointed to the period being of immense antiquity, and it is thought a key has been obtained which may solve the problem of the chronological valuation. It would seem that the period was at least 20,000 years old.

A REMEDY FOR DEPOPULATION.

AMONG the remedies that have been suggested for the depopulation of France, which is becoming more and more acute, have been several affecting the disposal of property. One proposal is that every estate should be divided at least into four parts, those not going to children being confiscated by the State; another is complete exemption of large families from taxation. Another suggestion of a different kind, which, though much less drastic, would probably be much more effectual, has recently been made. This is to incorporate in the scheme of electoral reform now under discussion the principle that every living French citizen should be represented, including women and children. While waiting for female suffrage every head of a family should have as many votes as he represents persons—one if he is a bachelor; two if married without children; three, four, five, etc., if he has one, two, three children, who do not themselves vote. This seems logical, and would give men who do not shirk their duty as citizens a plural vote, which would have to be reckoned with. Fathers of families would no longer be crushed as they now are under military burdens proportionate to the number of their children, and under taxes on food and houses, which increase with the number of little mouths there are to fill. At every turn of legislation—fiscal successional, military—the influence of big families would come into play, because they would be effectually represented and defended, and because they would count at the poll, and therefore could not be neglected by politicians out to catch votes. The force of the big family may thus become a lever which by continual movements would adjust the balance of political power, and the result might be a gradual modification of the mentality of a people which has no longer the wish to reproduce itself, and in this way is manifestly tending to national extinction.

THE SCHOOL DOCTOR IN JAPAN.

SINCE 1891 there has been attached to the Ministry of Instruction of Japan a medical councillor whose function it is to deal with questions relating to the hygiene of schools. In 1896 a commission composed of a number of eminent persons was appointed to draw up a scheme of legislation on school hygiene uniform for the whole country. In consequence of the recommendations of this commission a law was passed in 1898 which brought the school doctor into existence. In 1903 there were in Japan 11,868 schools with 6,459 doctors. To-day the proportion remains about the same. By special concession communes with a population less than 5,000 are exempt from the necessity of having a medical officer to themselves. The work of the school doctor in Japan would not seem to be hard, since three-fourths of them have only one school to attend, a third have two, while the rest have three or more. It is estimated that a school doctor has under observation not less than 500 pupils. Every communal school in Japan has no fewer than twelve classes. The medical officer has to visit every year in April all the pupils, examining them minutely, and must report on official forms the results of his examinations to the Government. Moreover, he has to keep a watchful eye to prevent the spread of infectious diseases, and to see that the buildings, desks, and so forth are kept in a good sanitary condition. Great attention is paid to physical education in the Japanese schools. In the communal and middle schools three hours a week, in the upper schools for girls three to six hours, and in the training colleges from two to four hours are given to gymnastics. In the lower classes gymnastics are represented by games. In the upper classes they assume a military character, and in these classes sports are also taught, among them being swimming. From a very remote period great attention has been given to physical education in Japan. The Japanese are very fond of sports, manual work, and music. In the higher schools for girls hygiene and physiology are included among the courses of natural science. In the training colleges the students must write essays on school hygiene. In the elementary schools there are readings on the importance of gymnastics and physical exercises for the preservation of health. There is no corporal punishment, and no religious teaching, moral instruction taking its place. In addition to Sundays, Japanese school children have ninety days' holiday in the year, divided into three periods. In the communal schools a rest of fifteen minutes is allowed for every hour of work.

A NEW TYPE OF CEREBRAL MALDEVELOPMENT.

DRS. G. A. SUTHERLAND and H. PATERSON[1] have studied two cases of what they name "forebrain aplasia" in infants. The condition is characterized by a definite series of signs and symptoms during life, and after death finds its explanation in definite pathological changes in the brain. Both patients were females, and there was nothing in the family history to throw light upon the affection. Both

[1] *Quarterly Journal of Medicine*, Oxford, 1913, vii, 61.

were pleasing and healthy looking types of babyhood, but strikingly placid, apathetic, insensitive, and when they died, at the ages of 9 weeks and 6 months respectively, had given no evidence of being able to see or hear. Fits of automatic crying occurred at irregular intervals, yawning was a marked feature throughout, sucking and swallowing were seriously interfered with. Curious vicissitudes in the rhythm of respiration and the heart's action were observed; for no apparent reason the respiration would rise to the rate of 120 or 160 a minute, and was cyclic in character with periods of tachypnoea and apnoea; attacks of tachycardia up to a rate of 200 a minute were observed in both the patients, and causeless pyrexial attacks were met with. Twitching of the limbs was the first sign noted in each case, and was a prominent feature throughout; sensation was entirely absent. At the *post-mortem* examination external hydrocephalus was found; the whole of the cerebral hemispheres, with the exception of the extreme hinder parts of the posterior lobes, was atrophied; the cerebellum, medulla, pons, and basal ganglia presented a normal appearance, and the blood supply seemed to be normal. In fact, only those parts of the brain that are developed from the anterior vesicle or prosencephalon were primarily affected in these two cases. The authors of this paper are to be congratulated upon the isolation of a fairly definite clinical type of cerebral maldevelopment from the many possible varieties of that condition.

INDUSTRIAL ILLUMINATION.

The National Gas Exhibition is a thing of the past, and no doubt the many thousands of visitors who made the aisles almost impassable during the closing days are taking its lessons to heart. According to one of the lecturers 600,000 kitchen chimneys still start smoking every morning in the London area, so that there is a pretty considerable lump for the reformative leaven to work in. One incidental drawback that struck us in making a final round was the fact that all the model rooms, alike in the town flat and the country cottage, were over-lighted. This excess, of course, is essential for exhibition purposes, but it is to be hoped that no unthinking visitor will draw the conclusion that five burners are necessary in a room where one or two will suffice. A useful corrective of such an impression was provided at the conferences, where it was pointed out repeatedly that the appetite for light grew by what it fed upon, and that Nature resented excess of light as much as excess in anything else. Professor Vivian B. Lewes made this very clear at the final conference—one of manufacturers—when he said that while there was not the slightest doubt that bad lighting (in factories and workshops more particularly) meant accidents, inefficiency, and strained eyesight, yet it was also a fact that the more light people had the more they wanted, and that it was a debatable point whether the increasing amount of light which people were accustoming themselves to use was not having a serious effect upon the general eyesight. Proper lighting, he added, was much more a question of the proper arrangement of lamps than of candle power. The main subject for discussion at this particular conference was the lighting as well as the heating and ventilation of the workshop. The weavers in cotton mills, Professor Lewes said, needed a very high degree of illumination, and many other trades required less; but while it was impossible to lay down any hard and fast rules, it had always seemed to him that, no matter what the trade, a large workshop required two perfectly distinct methods of lighting—namely, a general illumination which enabled the whole of the floor space and machinery to be seen perfectly, and a local illumination concentrated on the special work each man was carrying out. Mr. Leon Gaster said that he believed that in years to come the immense economic importance of light would be recognized far more fully than to-day, with the result that the illuminating apparatus and the machine to be illuminated would be considered as one unit, and that no factory would be schemed out without as much scientific planning for the artificial lighting as for the maximum window space.

GASEOUS EMBOLISM AFTER ARTIFICIAL PNEUMOTHORAX.

In discussing the risks of gaseous embolism in the treatment of phthisis by an artificial pneumothorax, I. Holmgren[1] states that in the course of about one thousand injections he has had one fatal and one serious case. In the first of these an attempt was made to collapse the left lung. A saline solution was injected into the pleurae, and was followed by 200 c.cm. of nitrogen under considerable pressure. The discomfort and giddiness which followed soon passed off, and the operation was repeated several times with impunity, 200 to 300 c.cm. of gas being introduced on each occasion into the chest. After 160 c.cm. had been admitted at the sixth injection, the patient suddenly became dyspnoeic and cyanosed. Consciousness was lost, the pulse was 50, and the eyes were rotated to the left and slightly upwards. The muscles of the neck and shoulder on the left side contracted, and the patient died in a position of opisthotonos fifteen minutes after the onset of the attack. In the second case several injections of gas had been given on the left side when, immediately after an injection of 500 c.cm., the patient became partially unconscious. His respiration was 40 and his pulse 120. There were muscular contractions of the left hand and foot, and deviation of the eyes to the left. After about ten minutes the attack began to pass off, but the patient did not recover till next day. The injections were discontinued. The author thinks that the lung was adherent to the chest wall in both these cases, and that he had not, as he first thought, formed an intrapleural pneumothorax. He also thinks that the same mistake has been made by writers who have reported cases which ended fatally in the course of refilling a purely hypothetical intrapleural pneumothorax. Even the manometric oscillations may be misleading, for when the lung is emphysematous and the point of the needle is lodged in the lung, oscillations may occur which are indistinguishable from those observed when the point of the needle is in the pleural cavity. Though gas may be, and often is, injected into the lung by mistake without harm, the risk of embolism, if the gas be under high pressure, is considerable. In doubtful cases, therefore, it is advisable to let the patient aspirate into his chest gas which is under atmospheric pressure, or a little less. When over 100 c.cm. of gas have been rapidly sucked into the chest by this method, and large oscillations about a mean negative pressure have occurred, the operator may be sure that a true intrapleural pneumothorax has been formed. But if the needle has penetrated both layers of the pleurae, and is lodged in emphysematous lung, small manometric oscillations may appear about a mean negative pressure. The operator may be further misled into believing that the needle's point is between the layers of the pleurae by finding that gas escapes easily into the chest, and that the intrathoracic pressure slowly rises as if a small intrapleural pocket of gas were being formed. This may, in fact, be the case; but if the rise of pressure in the gas within the chest is followed by a slow and steady fall before the needle is withdrawn, the gas has almost certainly escaped through the lung. In one case the author injected 120 c.cm. of gas under atmospheric pressure into the chest after small oscillations about a mean negative pressure of 6 cm. of water had appeared. Later, it was found that the pleurae were everywhere adherent, and that the gas had escaped above the clavicle, where it caused surgical emphysema. Thus misleading manometric readings may be given when the needle's point is on one

[1] Hygiea, November, 1912.

side or other of adherent pleurae; and when in doubt as to the interpretation of a manometric reading the author injects a small quantity of saline solution through the pneumothorax needle before he admits any gas. Then, if the needle be in the lung, the patient will cough; but if it be between the layers of the pleura, this will not happen. With free pleurae and large oscillations about a negative mean pressure, this precaution is superfluous, and the risk of gaseous embolism negligible.

SALVARSAN IN PERNICIOUS ANAEMIA.

COMPARATIVELY few cases of pernicious anaemia in which injections of salvarsan have been tried have been reported since Dr. Byrom Bramwell communicated the results of this treatment in the BRITISH MEDICAL JOURNAL (1912, vol. i, p. 1413). Amongst his seven cases favourable results were obtained in four. Friedländer published the account of a case which, though uninfluenced by Fowler's solution, rapidly recovered after two injections of salvarsan, followed by sodium cacodylate. Leede had previously recorded five cases with no beneficial effect. Four of these were practically moribund before recourse was had to salvarsan. Recently Boggs[1] recounted the effect of salvarsan in four cases under his own care, and in seven others treated by colleagues. Of the latter, two were apparently moribund, and no good effect was observed, whilst five showed distinct improvement after an initial drop in the blood count following injection. The interesting observation is made that previous treatment with Fowler's solution did not add to the risk of salvarsan administration. Of Boggs's own four cases all showed a favourable response to the drug, both in the relief of symptoms and in the regeneration of the blood. In none of the cases was there any suspicion of syphilis, and the serum and cerebro-spinal fluid were negative to the Wassermann test. Two of these cases, as the result of a single injection, became greatly improved, and the red corpuscular count increased by 2,000,000. The subsequent history is not recorded. A third case showed a very striking result. This was a patient in his fifth relapse, which remained quite refractory to Fowler's solution, and practically refractory to sodium cacodylate injections extending over four months. Salvarsan was then given intravenously in doses of 0.3 gram every four weeks, with the result that there was a steady rise in the number of red cells from an initial 500,000 to 5,000,000 at the end of sixteen weeks. The percentage of haemoglobin also rose from 23 to 90. Save for mild degenerative changes in the spinal cord, the patient was quite well. During treatment he had an attack of tertian malaria accompanied by a fall in the red cell count, but this rose again after quinine and the next dose of salvarsan. For six months afterwards he was kept under observation whilst employed as lift-man in the hospital, but was afterwards lost sight of. In the fourth case, in which nervous symptoms preceded the onset of blood changes, the red-cell count rose from 1,100,000 to 3,400,000 in twenty days after the first injection, eventually attaining a level of 4,000,000 (with 85 per cent. haemoglobin), but this was not maintained. The blood regeneration failed, and there was a speedy relapse, followed again by a rise to the normal after two more injections, but at no time were the qualitative changes absent from the blood picture. Relapses and recoveries went on for over a year, when the patient died of intercurrent bronchopneumonia. *Post-mortem* examination revealed the typical changes of pernicious anaemia with funicular degeneration in the cord. In all the eleven cases it was found that the salvarsan provoked a rather sharp febrile reaction, lasting for six to twelve hours after each injection, in marked contrast to the effect produced in syphilitics. All the necessary precautions in technique for the avoidance of such reactions were taken.

[1] *Johns Hopkins Hospital Bulletin*, October, 1913.

A "DIVISION OF CHILD HYGIENE."

THE "Division of Child Hygiene" is an administrative term. It covers the work of several branches of sanitary work carried on in several boroughs of New York which were amalgamated in 1908. A report for 1912[1] deals with midwives, infant mortality, foundling babies, day nurseries, institutions for dependent children, medical inspection and examination of school children, and with employment certificates. The organization of the service for this health work is set out in detail. Under each several section of the report are printed the notices and leaflets that are distributed to the public on health matters; some of these are very good, and well worthy of imitation in more than one part of this country. The instructions to midwives are excellent, and the fruits of that instruction are to be seen in the statistics of child-births. The incidence of ophthalmia neonatorum is small, and very similar to that found for cities at home. The report states that in 1909 the number of babies visited was 18,042, and 22 cases of ophthalmia neonatorum were found; in 1910 there were 23 cases amongst 32,201 births attended by midwives. The section on infant mortality is the report of many years' working of the "Summer Corps," a body of physicians and nurses who canvass the tenements of the most congested quarters of the city. They treat all sick babies found whose parents are otherwise unable to obtain medical care. An admirable handbill to be given to mothers is reproduced; it is headed "How to keep the baby well," and beneath there is a delightful picture of a mother with her baby. Then follows: "Food. Nurse your baby. Mother's milk is the best of all foods for babies. Ten bottle-fed babies die to one that is breast-fed"; and thereon follow directions about clothes, water, air, rest, and the like. In these days of bottle-feeding advertisements, got up to present a fair delusive form with the intent to secure fat dividends, it is well that the community should provide equally attractive advertisements for the securing of fat babies. And the broad-sheet of New York City is so much the more attractive, for it is natural.

IN the course of an all-night sitting on December 16th the London County Council considered the question of the future housing of London University. The Education Committee recommended approval of the Somerset House site, but the Improvements Committee advised the erection of buildings on the south bank of the Thames adjoining the County Hall now being built at the south-east corner of Westminster Bridge. This proposal, however, was negatived by 28 votes to 26, and the Council agreed to join with the Senate of the University in asking the Government to grant the use of Somerset House and to be responsible for the cost of housing the University, as heretofore.

ON December 4th Sir Andrew J. Horne and Sir Robert H. Woods were entertained at a complimentary banquet in the Royal College of Surgeons of Ireland, in recognition of the honour of the knighthood recently conferred upon them. The attendance was representative of the medical and other professions in Dublin. The Right Hon. C. A. O'Connor, Master of the Rolls, presided, having on his right and left the guests of the evening. The menu card was of artistic design, and contained excellent pictures of Sir Andrew Horne and Sir Robert Woods, each wearing his academic robes. Dr. James Little proposed the health of the guests in a suitable speech, and during the evening a programme of vocal music was provided.

[1] *The Division of Child Hygiene of the Department of Health of the City of New York.* By S. Josephine Baker, M.D., Director of School Hygiene. No. 4, Monograph Series. New York: Department of Health. 1912. (Demy 8vo, pp. 103.)

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

LONDON COUNTY COUNCIL.

Provision of a Street Ambulance Service.

THE General Purposes Committee reported to the Council on December 16th against the scheme prepared by the Metropolitan Asylums Board, at the request of the London County Council, for the provision of a street ambulance service for the metropolis,[1] on the grounds that it was not in accordance with the Metropolitan Ambulances Act of 1909, and that it was proposed that the administration should be wholly in the hands of the Asylums Board while the Council bore the cost. The Committee had come to the conclusion that the organization and provision of an efficient system must rest with the Council. A certain number of authorities had ambulances which would be placed at the service of the Council, but these were insufficient and additional provision must be made.

During the meeting of the Council on December 16th a further report on the subject was circulated. This was of a tentative character, and indicated the intention of the Committee to establish under the control of the Council ambulance stations with motor ambulances in the west, north, east, south-east, south, and south-west districts, with a station in central London. It was thought that the service might be carried on under the supervision of the chief officer of the Fire Brigade. In addition to motor ambulances, the Committee proposed to provide hand ambulances or litters for conveying injured persons for short distances. The Committee hoped after the Christmas recess to submit a detailed scheme with estimates of cost.

In the course of discussion Mr. P. A. Harris commented on the time that had been lost in trying to legalize assistance from the Metropolitan Asylums Board. Four years ago Sir William Collins, in an address published in the BRITISH MEDICAL JOURNAL, pointed out that it was beyond the scope of the Asylums Board to organize an ambulance system.

Administration of the Inebriates Act.

With reference to the decision of the Council to discontinue, after December 31st, 1913, the reception of inebriates at Farmfield Reformatory (BRITISH MEDICAL JOURNAL, August 9th, p. 343), letters from the Home Office were laid before the Council in which regret was expressed at the Council's action. The Home Secretary stated that he fully recognized the disadvantages under which the Council laboured in this matter, in consequence of defects in the law; he only abandoned the Inebriates Bill last session with the greatest reluctance, and would reintroduce it at the earliest possible moment, and would spare no effort to secure its passage. The Public Control Committee advised the Council to pass a resolution suspending its decision but reserving the right to take action if the Government did not introduce the bill early in the session, and if it were not satisfactory to the Council.

Reconstruction Scheme at Banstead Asylum.

The Council approved the preparation of plans for the subdivision of the wards at Banstead Asylum at a cost of nearly £50,000. It was stated that the dayroom often had to contain as many as 180 patients; it was unreasonable to expect effective supervision and control of so large a number. The difficulty of classifying the various types was very serious, and the medical officers found that patients after progressing towards convalescence in smaller wards quickly showed signs of relapse after removal, as was unfortunately necessary, to the large wards.

METROPOLITAN ASYLUMS BOARD.

Treatment of Tuberculosis.

An elaborate report on the subject of the treatment of tuberculosis in London, and the share in that work of the Metropolitan Asylums Board, was presented to the Board on December 13th by the Law and Parliamentary Committee. The report dealt with the history of the question in some detail, mentioning the exclusion of the Board (on the ground of being a Poor Law authority) from taking part in the administration of the Insurance Act of 1911, its subsequent inclusion in the Amending Act, 1913, and the effect of Section 3 of the Public Health (Prevention and Treatment of Disease) Act, 1913, permitting the provision by the Board, under agreement with other authorities, of accommodation for uninsured tuberculous persons. The Committee accepted the view of the Local Government Board, the London County Council, and the London Insurance Committee, that the resources of the Board should be utilized as far as possible in making provision for insured and uninsured tuberculous persons; in fact, the Committee pointed out that the accommodation provided by the Board up to the present had alone enabled effect to be given in the metropolis to the sanatorium provisions of the Insurance Act in anything like a reasonable time. The permanent accommodation required would be of the following character:

1. Sanatoriums for early cases of pulmonary tuberculosis in both sexes.
2. Sanatoriums for children, affording educational facilities.
3. Hospitals for rest cases and observation purposes, and for chronic, incurable, and advanced cases.

The Board was exceptionally well placed in regard to provision for tuberculous children. Queen Mary's Hospital could be extended to provide for 1,200 instead of 850 children, and an inexpensive reconstruction scheme at the institution at Margate would afford from 130 to 300 additional beds for surgical cases. The provision of hospital accommodation for advanced cases in adults would not offer much difficulty, but to complete the scheme it would be essential to provide one or two new sanatoriums on entirely modern lines for the treatment of early cases of pulmonary tuberculosis in adults. It was possible that one of the effects of the Insurance Act would be to relieve the pressure upon Poor Law institutions where tuberculous cases formed a large proportion; and rearrangement and amalgamations might set free considerable accommodation. The treatment of tuberculosis afforded a great opportunity for showing that the interests of the community could be best served by the cordial co-operation of every authority whose functions touched the problem in any direction; the character and extent of the subject prohibited any one administrative body from dealing with the whole of the work.

Professor W. R. Smith, M.D., in introducing the report, said that the institutions to be erected would not be such elaborate buildings as the fever hospitals, but of the simplest possible construction. Rest, hygienic conditions, and graduated exercise were the conditions required by the patients, and great care and economy were necessary in the initial stages in order that the best provision was made at the lowest possible cost.

The Board passed a series of resolutions expressing willingness to enter into agreements with the County Council and the London Insurance Committee for the provision of residential institutional accommodation for insured persons and their dependants, and for uninsured persons. It was agreed to find accommodation in existing institutions where possible and to provide one or two new sanatoriums for early cases in adults, to ask the Local Government Board to consider the possibility of further co-ordination of Poor Law work with a view to setting free some accommodation, and to refer to a Committee for further consideration the desirability of purchasing Mount Vernon Hospital, Hampstead.

Appointment of Medical Superintendent.

The Board decided to appoint Dr. E. B. Sherlock, who has been in the service of the Board for several years, to be medical superintendent of Darenth Industrial Colony in place of Dr. Arthur Rotherham, who has been appointed a commissioner under the Mental Deficiency Act, 1913. Dr. J. L. Gordon, assistant medical officer at Caterham Asylum, was promoted to fill the resulting vacancy of acting medical superintendent at the Fountain Temporary Asylum.

[1] BRITISH MEDICAL JOURNAL, December 6th, p. 1511.

WALES.

THE RED CROSS WORK AT SENGHENYDD.

SIR JAMES R. ANDREW CLARK, Bart., C.B., Chief Commissioner, St. John Ambulance Brigade (St. John's Gate, Clerkenwell), writes under date December 13th as follows with regard to the services rendered by the brigade in connexion with the disaster at the Senghenydd Colliery last November:

It is not the custom of the St. John Ambulance Brigade to notify through the press the occasions on which it renders first aid to the public, but I feel constrained to do so in connexion with the Senghenydd Colliery disaster in consequence of an official leaflet of the British Red Cross Society, No. C.L. 57 of the 20th November last over the signature of the Secretary, Mr. Hastings, which has come to my notice. In this leaflet, in an allusion to the work done by the British Red Cross Society at Senghenydd, the following paragraph occurs:

Ten detachments in all of the Society's helped in this work *and one of the St. John Ambulance Association.* (The italics are mine.)

As this statement, so far as the St. John Ambulance Brigade is concerned, is contrary to fact and misleading to the public I append for favour of publication in your JOURNAL the personnel of the Brigade which gave assistance on the occasion referred to, every member of which was fully qualified to render first aid both by certificate and by virtue of the yearly examination as to efficiency to which all members are subjected.

Divisions.	Number reporting for Duty.
Great Western Colliery	16
Maritime and Penrhiw...	14
Cwm Colliery	9
G.W.R. Cardiff	8
G.W.R. Newport	8
Cardiff City	6
Lewis Merthyr...	8
Aberbargoed	7
Coronation Colliery	4
Cardiff City Police	11
Rhymney Railway	15
Ynysddu	13
Silfynydd	14
Penycraig Labour and Progressive	9
Marine, Cwm. (Mon.)	6
Dunraven, Penycraig	7
Mountain Ash	10
Vochriw, Dowlais	5
Brithdir	13
Merthyr Borough	7
Ogmore Vale	1
Pontycymmer	1
Penrhiwceiber...	6
Abercynon	19
Nursing Divisions.	
Cardiff	12
Barry	5
Hopkinstown	12
Total	245

A total of 27 units supplying volunteers instead of 1, referred to in the circular quoted above.

We have also received the following letter dated December 16th, from Mr. Frank Hastings, Secretary of the British Red Cross Society (9, Victoria Street, London, S.W.), to whom Sir James Clark would appear to have communicated a copy of the communication printed above:

The letter signed by myself to which Sir James Clark takes exception gave quotations from your excellent reports of October 25th and November 1st on first-aid work in relief of the sufferers at Senghenydd.

The letter after quoting from your issue of October 25th ran:

Further details of the work will be found in the BRITISH MEDICAL JOURNAL of November 1st, 1913.

Ten Detachments in all of the Society's helped in this work, and one of the St. John Ambulance Association.

The JOURNAL concludes: This would seem to be the inception of a movement which is likely to be of great service in giving first aid in cases of national disaster, and to afford valuable training of a practical character to members of voluntary aid organizations. In other nations such use of voluntary aid from Red Cross societies and other bodies is well established and utilized. It requires financial assistance and co-operation between employers of labour and others on the one part, and voluntary aid organizations on the other. If established, it cannot fail to be of great benefit to the community.

The statement of the numbers of detachments helping was taken from your JOURNAL—as, indeed, seems obvious—and there was no error or misrepresentation on my part.

It was never intended to belittle the work of the St. John Ambulance Brigade by the quotation in question, which was adduced in evidence of the valuable work which Voluntary Aid Detachments perform in civil life.

The point to be made is the valuable humanitarian work capable of being done by men and women patriotic enough to join Voluntary Aid Detachments, not that this or that or anization was, by accident or good fortune, able to have more representatives present than another.

The statement with regard to the number of detachments which was published in the JOURNAL of November 1st was in accordance with the information then available to us. Shortly afterwards we were promised official information as to the work done by the St. John Ambulance Brigade at Senghenydd; this would appear to be contained in Sir James Clark's letter.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

RESEARCH DEFENCE SOCIETY'S MEETING IN EDINBURGH.

THERE was a large gathering to hear the address by Mr. Stephen Paget, on "The Natural History of Health and Disease" in the Queen's Hall on December 11th; it was the annual meeting of the Edinburgh Branch of the Research Defence Society, and, coming so soon after what has been called the Dogs' Bazaar, attracted a large amount of public as well as professional interest. Almost all the university medical professors were either present in person or sent apologies, as did several well-known clergymen. Mr. James Watt, W.S., who was in the chair, said that, in reply to those who were engaged in the so-called campaign of antivivisection, it was enough to point out that men distinguished in medical research had in many cases, in place of sacrificing any of the lower animals, actually given up their own lives, and many doctors had again and again risked their lives in research. Mr. Paget showed how vast had been the advance in knowledge of the causes of disease, and pointed out that the advance would not have been made but for experimental work on animals. He said that if that work were to be given up to-morrow the sum total of the pain of the world would not be lessened, but horribly increased. The Rev. Gavin Pagan, in moving a vote of thanks to the lecturer, said that the justification of the work was to be found in the results which it had had, not only for the benefit of man, but of the lower animals.

CHILD STUDY SOCIETY IN EDINBURGH.

On December 10th Dr. J. F. Tocher, Lecturer on Statistics in the University of Aberdeen, gave an address in Edinburgh, under the auspices of the Child Study Society, on the "Influence of Natural Selection and Environment on Child Life." Dr. John Macpherson, Lunacy Commissioner, presided. Dr. Tocher said he joined in the protest against the light and erroneous way in which eugenics and allied subjects were written and spoken about by certain somewhat irresponsible persons. What a practical people had to do was to study the limits of actual environment and the relative values of inheritance and environment. Knowing, as was now known, that heredity was of more account in improving the race than environment, it was necessary to pay even greater attention to heredity than to environment. It had been proved that selective elimination took place in child life, and that a high infantile death-rate left a stronger race of young survivors. Employment of mothers had been blamed for a very large proportion of infantile deaths. When, however, employed mothers were considered with respect to their habits and home conditions, it was found that those who had clean houses and who suckled their children had quite as great a number of survivors as mothers in general. Any legislation, therefore, which would interfere with the employment of the mother on the ground that the general infantile death-rate was thereby to be reduced or brought to a minimum would be quite futile. It had been proved that the less capable mentally and

also sometimes physically had on an average the larger families. There was nothing in the nature of occupations as such to produce a different fertility; a great deal of the difference was due to earlier marriages in one class and to postponement of marriages in others. Dr. Tocher said he was not an advocate of the view that a large section of the population would be better dead. He was not denouncing improvements in the housing or in the general comfort of the industrial classses. By all means let prompt action be taken to reduce child mortality to a minimum, and to render as effective as possible the rising generation, but let them also think of generations yet unborn. How were they to bring about a rise in the fertility of the mentally and physically able, and a fall in the fertility of the dull, unsocial, and criminally inclined sections of the population? Let them strive to bring about an increase of those who were best able to create a healthy environment wherever they went.

Edinburgh Royal Infirmary.

At a meeting of the managers of the Edinburgh Royal Infirmary, held on December 8th, Dr. McKenzie Johnston in the chair, letters were read intimating the appointment of the following representatives to the board of management for 1914: By the magistrates and Town Council, Councillor John Young; by the Senatus Academicus, Professor Rankine, K.C., LL.D., and Sir Halliday Croom, M.D.; and by the S.S.C. Society, Mr. J. B. Mackintosh, S.S.C. Dr. Robert A. Fleming was appointed an ordinary physician to the institution for five years from date, and Mr. Thomas Fraser was appointed non-resident house-surgeon to Dr. Malcolm Farquharson for three months.

Edinburgh Cripple and Invalid Children's Aid Society.

The annual meeting of the Edinburgh Cripple and Invalid Children's Aid Society was held on December 10th. Lord Salvesen was in the chair, and, after the report had been submitted by Mr. J. P. Watson, W.S., the Chairman spoke in strong support of the work of the society. Dr. J. W. Ballantyne described a visit he had paid to the workrooms, in which some twenty or twenty-four cripple children were busily and happily engaged in dressmaking, tailoring, joinery work, and toy-making. He thought the society had acted wisely in securing additional accommodation, for it had struck him that the rooms were uncomfortably crowded. The cripples had a strong claim on sympathy; even etymologically this came out, for after all the cripple was simply the creeper, the one who could creep but could not walk. Others derived the word from *cruipan*, to contract, and thus the cripple was the contracted one, the one whose joints and whose activities were contracted. Dr. John Brown had said that a dog was like a perpetual baby in a family; but the cripple was the perpetual baby—physically, at any rate; he needed all the family's care and protection, and many a time he put the family in his debt by his softening and ameliorating influence upon its stronger and perhaps harder members.

Queen Victoria's Jubilee Institute for Nurses.

The annual meeting of the Scottish Branch of the Queen Victoria's Jubilee Institute for Nurses was held in Edinburgh on December 11th, and Lord Strathclyde, the Lord Justice General for Scotland, presided. The report stated that for the fuller equipment of the nurses, and in consequence of the growing prominence given to the treatment of tuberculosis, it was deemed advisable to add this as a special subject to the nurses' curriculum. The number of Scottish Queen's nurses now on the roll was 379, exclusive of candidates undergoing training. It was felt that the institution of maternity benefit had somewhat altered the conditions under which such cases had been nursed, and, with the approval of the doctors, a charge of 5s. for attendance at all normal cases in receipt of the benefit had been instituted, and an agreement had also been come to with the dispensaries for a payment of 5s. a case in the event of their negotiations with the friendly societies proving satisfactory. During the year 127,048 visits had been paid in Edinburgh and 7,095 in Leith, 502 confinements having been attended and 373 operations. Lord Strathclyde, in moving the adoption of the report, said there were no fewer than 238 nursing associations affiliated with the institute, and many of them in remote parts of Scotland. He was not surprised to know that additional subscriptions were not coming in; that was to be expected for a little time because of the slight disturbance of their peaceful progress caused by the passage of the Insurance Act and the necessity for adjusting and arranging their operations to the operations under that statute. He himself anticipated great advantage to the nurses on account of the passage of the Act, and especially in connexion with the substantial grant of money for nursing and medical purposes in the Highlands and Islands of Scotland. Sir Thomas Clouston, Mr. Alexander Miles, and Dr. F. Porter also spoke in high terms of the good work being accomplished by the nurses.

Dr. Dow of Dunfermline.

Dr. W. B. Dow, who has been in practice in West Fife since 1858 and settled in Dunfermline in 1868, was recently the guest of honour at the annual dinner of the Dunfermline Curling Club, when the Provost, who presided, presented him, in the name of his fellow members, with a silver cigar box. Dr. Dow has taken a large part in the life of Dunfermline. He was a member of the first school board elected after the passing of the Education Act, 1872; he was one of the founders of the cottage hospital; he was the first teacher of an ambulance class in Dunfermline, and is now giving similar instruction to the Boys' Brigade. He has been President of the Fife Branch of the British Medical Association and of the Fifeshire Medical Association, and for eighteen years has been a member of the Court of St. Andrews University. The curling club is one of the oldest in Scotland; it is believed to have been established in 1738, and minute books exist from 1784. One of its rules is: "During the meetings of the club and also while the members are on the ice the strictest moral conduct shall be observed, any impropriety being liable to a fine at the will of the majority of the members present."

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Typhoid Fever.

An alarming outbreak of typhoid fever has occurred in Markethill, a small town a few miles from Armagh. A postman and his son have died in the Armagh Fever Hospital. Other cases have since been reported, but so far are only suspected. Though the outbreak of fever is diminishing in Clonmel, it has occurred in other parts of the rural district, and 1 death is reported. There are at present 17 cases in the hospital. An epidemic of typhoid fever is also reported at Brookeborough in co. Fermanagh, and 1 patient has died. Last week an outbreak of typhoid fever occurred in Newry; 3 patients have died, and there are 2 other patients suffering from typhoid fever in the hospital. Another outbreak has occurred at Swords and Malahide, near Dublin. Both the water and milk in the district are under suspicion, and the suggestion has been made that the infection might have been brought to the district in the food which was supplied to people who are on strike. A resolution was passed unanimously that the dispensary doctor should be requested to state whether the victims of the recent outbreak of typhoid fever in the Swords district had been receiving food from this source, and if so, whether he has made any effort to obtain a sample of such food for analysis.

At the last monthly meeting of the Pembroke Urban District Council the Chairman made a statement with regard to the recent outbreak of typhoid fever in the district. There had been, he said, 28 cases, 9 of which were treated in the hospitals. It was now fairly certain that inasmuch as the period of incubation was past, there was no likelihood of the occurrence of further cases. He took the opportunity to acknowledge the prompt, vigorous, and successful steps taken by the Public Health Committee and its sanitary officials. The report of the Vice-regal Commission on the Irish Milk Supply, he added, contained suggested amendments of the law which would enable urban authorities to obtain better control over milk

supplies in their districts, and to insist upon precautions which would protect the community.

POLIOMYELITIS.

The outbreak of poliomyelitis in the North of Ireland seems to be abating; there have been no fresh cases during the past week. There are still a score of patients under the care of Dr. Burgess, Coagh. Eight deaths have occurred; the ages of the victims vary from 5 to 11 years.

TYPHUS FEVER AND THE DUBLIN SLUMS.

The Public Health Department of the Dublin Corporation has had to deal with an outbreak of typhus fever. Most of the cases occurred on the north side of the city, several of them in tenement houses. In this connexion the evidence of Sir John William Moore before the Committee to inquire into the housing of the working classes is of special interest. He said that in 1881 the cases of typhus fever admitted to Dublin hospitals numbered 1,220. From 1890 there was a marked improvement, and last year the number of cases admitted was only 12. This year there was a very marked increase, the number reported up to September 30th being 70. This called for careful inquiry, as the prevalence of the disease was intimately connected with overcrowding, dirt, and poverty. Sir John Moore also stated that a very serious menace in the future in Dublin was the decline in vaccination. The population of Dublin would suffer most severely if smallpox should happen to be introduced into the city. Measles and whooping-cough, he also said, were infinitely more fatal to the youthful population than scarlatina and diphtheria. The toll of human life exacted by these diseases was enormous, and they spread in the presence of overcrowding, underfeeding, and dirt. Pneumonia, which had for some years stepped into the place of typhus fever, was largely preventable. The question of scheduling these three diseases as notifiable should be seriously entertained.

AUXILIARY ASYLUMS.

The Mullingar Asylum Committee has notified the local authorities that the overcrowding in the asylum can only be dealt with satisfactorily by the establishment of an auxiliary asylum, which it was stated would mean a saving of £2,000 on the rates of the counties of Meath, Westmeath, and Longford. The Longford County Council has agreed to a proposal which had been made to obtain one of the workhouses in the county as an auxiliary asylum, and the Trim Board of Guardians has pointed out that in its opinion the Trim workhouse would be a suitable building for the purpose.

EMIGRATION FROM IRELAND.

The Registrar-General reports that the number of emigrants, natives of Ireland, who left Irish ports during the month of November was 1,151, as compared with 1,274 in the same month last year, a decrease of 123 (70 males and 53 females). The total number of emigrants during the last eleven months was 30,536, compared with 28,872 in the corresponding period of last year, a total increase of 1,664. Of this number 3,880 went from Leinster, an increase of 116 compared with the first eleven months of last year; 7,726 from Munster, an increase of 642; 12,186 from Ulster, an increase of 596; and 6,744 from Connaught, an increase of 310.

SANATORIUM BENEFIT.

A conference of delegates representing the county councils of Queen's County, King's County and North Tipperary has reported in favour of the joint establishment of a sanatorium and a home for advanced cases of tuberculosis for the three counties, and has suggested that the workhouse disused since the amalgamation of the Donaghmore and Abbeyliex Unions should be utilized as part of the scheme.

The Tyrone County Council has adopted a scheme for sanatorium benefits in the county. A central sanatorium is to be erected in a suitable part of the county. It is to have twenty-eight beds, of which twenty will be provided as soon as possible, at a cost of £2,000, not including the purchase of the site. It was also decided to erect two convalescent homes and dispensaries in other districts of the county, each to contain dispensary, waiting-room, eight beds, and accommodation for the staff, at a cost of £600 each, to provide six movable sleeping shelters at a total cost of £150, and to hold tuberculosis dispensaries at Omagh, Strabane, Dungannon, Cookestown, and Aughnacloy, where patients could attend and be examined by the tuberculosis officer. The cost of maintenance of this scheme was estimated to be £2,886 annually.

Special Correspondence.

PARIS.

Spinal Anaesthesia: Operation for Gastric Crises: Vaccine Treatment of Gonorrhoeal Rheumatism.

THE medical and surgical societies of Paris suspend their meetings for a longer period at the end of the summer work than do the corresponding bodies in London, but practically all of them had recommenced work by November. One paper read at the opening meeting of the Academy of Medicine supplied an account by Jonnesco of the progress of spinal anaesthesia. He claimed once more that operations on every part of the body could be performed with little or no danger if spinal anaesthesia were employed and the administrator thereof was an expert, and stated that of 11,324 cases of spinal anaesthesia which he had collected, the site of operation was either the head, the neck, the thorax, or on upper limbs in 1,035. In Roumania nearly all military as well as civilian surgeons employed spinal anaesthesia as a routine method, and he was confident that in the near future its utility would be more fully appreciated. At the Surgical Society Dr. Mauclaire reported that he had obtained success in the treatment of the gastric crises of a case of tabes by extirpating the intercostal nerves. The patient had been subject to gastric pains for over fifteen years, and nothing appeared to give him any relief. They, however, disappeared after the intercostal nerves on either side had been removed. It was also mentioned that Francke had collected from various sources accounts of 19 cases of tabes treated in the same fashion. In 7 a complete cure was effected, in 9 the pains recurred, and the remaining 3 patients died. Dr. Hartmann reported that in one case that had come under his personal observation the immediate result of removing the intercostal nerves was entire cessation of the gastric pains, but subsequently the crises recommenced. At the Medical Society of the Hospitals, Drs. Dopter and Pauron reported that they had obtained excellent results by adopting Cruveilhier's method of treating gonorrhoeal rheumatism with a sensitized vaccine. In one case in which the joint affected was the knee the swelling, pain and stiffness before treatment were marked. The first injection of the vaccine produced a marked general reaction, but on the following day the pain in the joint had ceased and the swelling around it greatly diminished. A second injection was then given, and this practically cured the patient, movements of the joints becoming practically normal in five days. The authors pointed out that long-standing cases naturally required more prolonged treatment, but the cures eventually effected were equally startling, and entirely superior to those obtained by any other treatment. They had also adopted the treatment in cases of gonorrhoeal orchitis, and had obtained corresponding results. In about twenty-four hours pain disappeared and swelling diminished, and in three or four days the patient could go about without discomfort, and was speedily and completely cured.

THE first general meeting of the Belgian National Anti-quack League was held at Antwerp on December 14th. The president is Dr. Gynzburg, the secretary M. R. Van de Vorst. The President gave an account of the work of the league. Dr. Dejace, honorary president of the Belgian Medical Federation, delivered an address on the dangers of quackery, and several other papers were read.

DURING the academic year 1912–13 the following medical degrees were conferred by the several medical faculties in France: Paris, 398, in addition to 35 degrees not entitling the holder to practise in France; Montpellier, 115 and 1 non-qualifying degree; Lyons, 115 and 1 non-qualifying degree; Bordeaux, 101 and 1 non-qualifying degree; Toulouse, 69 and 4 non-qualifying degrees; Lille, 40; Nancy, 29 and 5 non-qualifying degrees; Beyrouth, 37; Algiers, 12.

Correspondence.

THE PREVENTION OF GUINEA-WORM INFECTION.

SIR,—It is an old saying that "there is nothing new under the sun."

In the report of the Bombay Bacteriological Laboratory for 1912 Major Elen Liston remarks: "If the theory which I have outlined above as to the manner in which this disease" (guinea-worm disease) "is spread is correct, and we hope shortly to prove its truth, it is very unsatisfactory to think that the great suffering which this disease entails . . . is due to ignorance and could be prevented by so simple an expedient as the straining of the drinking water through a piece of cloth . . . so as to filter off the little creatures which cause the disease."

In "Nova et Vetera" in the BRITISH MEDICAL JOURNAL for June 21st last I read that about the middle of the seventeenth century De la Motte Lambert, Bishop of Beirut, made a pastoral tour in the Far East, and recorded his experiences. Regarding guinea-worm he says: "The way to avoid this worm is to drink only wine, or, if water is used, only such as has been carefully filtered through linen."—I am, etc.,

J. B. SMITH,
Lieutenant-Colonel, I.M.S.

November 23rd.

SPECIAL HOSPITALS.

SIR,—Mr. Hugh E. Jones's literary communications have an engaging *naïveté* which is positively refreshing. "The charge of inconsistency does not trouble me," he says, and his letters fully corroborate the statement. But he does deplore "correspondence in journals and newspapers" which "involves so much waste of time, and is so prolific in misunderstandings and misinterpretations." This being his opinion, why did he not act upon it? Surely he cannot have forgotten that he began the correspondence in the JOURNAL.

He now announces his withdrawal from further correspondence. It is not surprising. Mr. Jones is progressive; the case he defends is not. His arguments for eye and ear hospitals destroy his case. Let me repeat them:

(*a*) Personally I should never defend the practice of compelling one man to do work of different kinds, for one of which kind he had a disinclination or for which he was unfitted by lack of training or of certain natural qualifications.

(*b*) For many years I have advocated the division of the staff into two main groups, and a third smaller one consisting of those who from love of the work, long training, and the character of their private practice, found it impossible to relinquish either of the two specialities. The third group would be gradually eliminated without injury to any one, and as a matter of fact, this transformation is in progress at the present time.

(*c*) For years it has been the desire of some members of the staff (myself included) to organize the hospital on the plan of the New York and Boston Eye and Ear Hospitals; but owing to circumstances over which we have no control our wishes have not been realized; though there has been for many years an informal partial division of labour.

(*d*) It is hoped that eventually a complete and separate staff of surgeons will be provided for each department.

(*e*) I have for many years advocated separation of the staffs.

Practical men will see in these statements ample proof of the correctness of the contention in the BRITISH MEDICAL JOURNAL and *Daily Post* editorials, that to associate in hospital practice "the treatment of diseases of the ear with those of the eye" was "a combination which placed a serious impediment in the way of the growth of either."

Holding these views, it is difficult to understand Mr. Jones's attempt to defend the out-of-date policy of those to whom the direction of the Eye and Ear Infirmary has been entrusted. From one point of view only is it understandable—namely, the feeling that right or wrong the committee must be supported!

Now that Mr. Jones has withdrawn from the correspondence, we may perhaps learn who on the medical staff supports the committee in its adherence to a policy which, in my opinion, is foreign to the spirit of medicine, and damaging to the prestige of the infirmary. It is difficult to conceive of a committee which of its own initiative could ignore the considered opinion of so eminent an authority as the senior surgeon to the institution.

One could wish for independent opinions, as the principle at stake is of infinitely greater importance than the practice at any individual hospital.

Unfortunately, it would appear as if "double-harness" hospitals were unfavourable to the formation of single-minded opinions; for we have the remarkable spectacle of:

(*a*) Mr. Jones, the advocate for separate staffs, and
(*b*) Mr. Jones, the advocate for a single staff.

In support of the latter position he writes:

(*a*) These studies [the treatment of diseases of the ear with those of the eye] were of mutual assistance to one another, and *if the practitioner had sufficient time and energy to devote to them, neither science sufferd.*

(*b*) When a surgeon has found that he had not time or inclination to follow up the rapid advances of otology, *he has given that branch up, and handed his work over to another.*

(*c*) I do not admit that the progress of either otology or ophthalmology or the interests of the infirmary have suffered on this account; and, as I have stated above, *whenever a surgeon has felt that he had not the time nor the inclination to follow the rapid advance of otology he has given up the practice of that branch.*

The italics are mine.

It will be noted that Mr. Jones passes by in silence four of the five facts I enumerated to prove that the Eye and Ear Infirmary had barred the way to progress in the sciences of ophthalmology and otology. His comments on the first fact—namely, the refusal of the committee to elect Mr. Harcourt to the position of honorary assistant surgeon—are, to say the least, not happy. "The committee," he says, "were no doubt influenced in their selection by the fact that Mr. Harcourt's competitor had had considerable experience of operative ear work, and that he had qualified twenty years later than Mr. Harcourt."

As to these reasons, it may be remarked, first, that there is no age limit for assistant surgeons; and, secondly, that nothing is said as to experience in eye work. Again, special operative ability obviously is not of importance in making appointments for assistant surgeons at the Eye and Ear Infirmary, for assistant surgeons there are not permitted by law to operate for twelve months after appointment. A skilled operator would be wasted.

Mr. Harcourt had had not only an extensive experience, but three and a half years' special experience at the Eye and Ear Infirmary, and his surgical merits are evidenced by the fact that he took the Fellowship of the Royal College of Surgeons of England in 1907. I can only surmise that the surgeon with whom the new assistant would have to work wanted a man to whom he could hand over the *hospital* ear work. On this supposition Mr. Harcourt's non-election is intelligible. There has been another vacancy on the assistant surgeon staff within the last few months, but "considerable experience of operative ear work" played no part in that election. Why? Again a stranger was appointed. This question of the presentation of the honorary appointments—surgeons and assistant surgeons—to strangers is also a matter which requires attention.

The present Lecturer on Ophthalmology at the Liverpool University was appointed in 1885. He was the senior surgeon to the Liverpool Eye and Ear Infirmary—now on its consulting staff. During the twenty-eight years which have elapsed, a large number of medical students must have passed through his hands. What encouragement has been held out to them of appointments at this hospital?—or do Liverpool medical men not appreciate hospital appointments?

Mr. Jones—the advocate for separation of the staffs—ends his letter by the remark that "the committee of the Liverpool Eye and Ear Infirmary may be trusted to proceed with their plans, as funds become available, in their own time and in their own way."

It is not a question of funds; it is a question of policy. To double the staff would not entail additional expenditure. The worst that might be feared would be increased interest in the hospital!

If it be the intention of the Liverpool public to see Liverpool take a national place in medicine, as in science and commerce, and if the noble support given annually by the city to the Liverpool University be any criterion, then

I am sure that the Liverpool public will expect the committee of the Eye and Ear Infirmary to go with the times.—I am etc.,

Liverpool, Dec. 11th. THOMAS H. BICKERTON.

NOMENCLATURE OF TUBERCULIN DOSES.

SIR,—The suggestion in the JOURNAL of August 30th by Dr. J. Alfred Codd is one well worth consideration by all who trip and stumble over the incomprehensible and forgettable doses used in tuberculin treatment.

Dr. Clive Riviere and Dr. Egbert Morland, in their splendid *Oxford Manual*, use the cubic millimetre with much help to the reader, but there is still a little left to mental and arithmetical gymnastics in comprehending and calculating the smaller doses. Thus, for fully three-quarters of a course of treatment one is dealing with decimals of 1 c.mm. If, however, one dealt with multiples of ψ (psilon) till these reached 1,000, and thereafter with multiples of 1 c.mm., the average brain, not taught to think in four or five places of decimals, would feel more comfortable.

Further, in Riviere and Morland's book there is still some difficult mental arithmetic in dealing with the dilutions. For example, they say "T.R. 4 signifies the fourth power of ten, or one followed by four noughts—that is, a 10,000 dilution of T.R., containing in the syringeful 0.1 c.mm. of original fluid." Now, how is the mind to connect "0.1 c.mm." with "4"? In the hurry of the consulting-room one is placed in this position. "I wish to give 0.1 c.mm. of T.R. Which of these dilutions before me must I use, and in what amount? 0.1 c.mm. is one ten-thousandth part of 1 c.cm., and 10,000 is 10^4; therefore I must use dilution 4 and take a full syringeful." Now this is bad enough, but my confusion is more when I want to take 1.8 c.mm. or 6.3.

If, however, ψ be taken as a unit, then dilution 6 is dilution (j), so that I can always know that 1 c.cm. of 6, now called (j), is 1 ψ, and that fractions of 1 ψ are parts of the weakest solution (j). I would call dilution 6 (j), 5 (ij), 4 (iij), 3 (iv), 2 (v), and 1 (vj). Then, when I wished to give 100 ψ (that is, 0.1 c.mm.), I would say to myself, "There are three figures in 100; therefore I use bottle (iij), and I take 1 c.cm. of it." If I wished 150 ψ, I would say again, "There are three figures; that suggests bottle (iij), but my syringe will not hold 1½ c.cm. I shall therefore take 1.5 divisions of (iv) in my Lieberg's syringe."

I think a system like this makes for greater ease in working, in estimating dose, and in appreciating the amount of tuberculin given.

Greenock, Oct. 29th. KEITH ROBERTSON.

RECENT VIEWS ON SYPHILIS AND SPIROCHAETES.

SIR,—May I be permitted to make a few remarks on a letter dealing with the above which appeared in the BRITISH MEDICAL JOURNAL, December 13th, p. 1560?

Concerning the granule, which has lately in this country received so much attention—in fact, ever since the discovery of the *Leucocytozoon syphilidis*—it is highly probable that the granule is not a spore but only a stage in the extracellular development of the spirochaete. A protozoal spore is the result of a multiple subdivision of the zygote—a name given to a female cell after it has been impregnated. The syphilitic spore has already been shown to differ chemically from all the other phases met with in the life-cycle of the *Leucocytozoon syphilidis*.[1] Moreover, reasons have been adduced why the spore is not directly affected by our present-day methods of treatment.

I cannot understand why Dr. Mott says that it is very necessary to get the life-cycle of spirochaetes worked out. Dr. Mott was fully aware of the work done on the *Leucocytozoon syphilidis* as long ago as December 3rd, 1912, and on December 8th, 1912, he saw some of the phases *in vivo*, and also several in sections.

Unfortunately the discovery of the life-cycle of the organism of syphilis upsets the ultra-optimism which has resulted from the recent discoveries made in this disease. In the minds of a few, ultra-optimism must at this juncture prevail; therefore the spirochaetal idol must on no account be broken. The discovery of the leucocytozoon has met with hostile criticism only at the hands of those who have never attempted to repeat any of the work. The two observers abroad who have worked at the subject are Klausner in Prague and Peyri Rocamora in Barcelona, both of whom have been able to find the bodies in sections in syphilitic material only. To be able to demonstrate the phases in sections is most important, since permanent specimens are obtained, and observations made therefrom do not have to be taken on trust, as is the case with those made solely from *in vivo* examinations. Moreover, the microchemistry of the bodies in fixed material can be studied.

Allow me to state in conclusion that if this ultra-optimism is maintained, and certain rules and regulations arise as an outcome thereof, we shall have as many, if not more, cases of syphilis in the next decade than we have now.—I am, etc.,

London, W., Dec. 14th. J. E. R. MCDONAGH.

[1] *Biochemical Journal*, vol. vii, No. 5, p. 517.

ANTIMONY IN SYPHILIS.

SIR,—You report that "luetin," an antimonial compound, is likely to dethrone the arsenical compound salvarsan in the treatment of syphilis.

Physicians of a former generation used antimony for certain forms of syphilis with great success in the famous "Plummer pill," which consisted of mercury, guaiacum, and antimony sulphide. It is noteworthy that when the treatment of syphilis by an arsenical compound—such as Donovan's solution—had gone out of fashion for some years a large number of cases had accumulated which yield to salvarsan.—I am, etc.,

Dublin, Dec. 12th. J. C. MCWALTER, M.D.

THE ROYAL COMMISSION ON VENEREAL DISEASES.

SIR,—I have noticed in the JOURNAL of November 29th certain extracts from the official report on the above subject in which it is stated that Colonel Scott gives the following statistics of venereal disease from 1888 to 1912—namely:

1888—Admissions into hospital in United Kingdom	224.5 per 1,000
1912—Admissions into hospital in United Kingdom	56.6 per 1,000

and in India the reduction had been still more marked.

Colonel Scott attributed this diminution to greater temperance and care of the soldier, etc., with which I in part cordially agree, but surely there must be something more to explain this extraordinary decrease as shown by statistics, which can so often be fallacious. Let me suggest one explanation. I believe I am correct in stating that before I left the service in 1891 the practice had begun of not always admitting men into hospital with primary diseases, but treating some of them in barracks with subcutaneous injections of mercury, etc., whilst doing light duty, or, if admitted in the first place, were, later on, treated in barracks and not readmitted. If this be true such action must considerably affect statistical returns.

Whilst I am on this subject, with a past experience of thousands of cases treated by mercurial inunction and otherwise, it is a source of great regret to me to find that salvarsan is becoming so much adopted by the profession in preference to mercury, although I have no right to express an opinion on the new treatment, having no personal experience of it. But mercury has stood the test of generations whilst arsenic has yet to stand the test of experience, and, already, I see antimony suggested in its place, and my firm belief is that the day will come when mercury will regain its well-merited position in the past as the best treatment for syphilis in its primary stage.—I am, etc.,

ARTHUR B. R. MYERS,
Brigade-Surgeon Lieut.-Colonel (late Brigade of Guards).

London, Dec. 12th.

THE CRAZE FOR APPENDICECTOMY.

SIR,—The appendix is a lubricating gland placed at the bottom of the ascending colon for the purpose of speeding up the intestinal heavy traffic.

The intestinal contents, at this part, have lost their fluidity and their coefficient of friction has greatly increased, and in addition the faeces have to climb a very steep, almost vertical incline. On *a priori* grounds we would expect Nature to provide additional lubrication here over and above the ordinary mucus of the intestine, and she has risen to the occasion and has evolved the appendix.

Many years ago, when the operative treatment of appendicitis was just coming into vogue, I treated some half-dozen cases by the usual incision and drainage, and although they all fortunately recovered, their convalescence was so slow and tedious, complete recovery taking several months, that I determined to adopt a "non-militant" method of treatment. Reasoning that appendicitis was usually due to blocking of the mouth of the appendix by faecal accumulation, causing distension and inflammation, it followed that the most rational method of treatment was at once to administer saline aperients, and so remove the obstruction.

I have never had occasion to regret the adoption of this method, for of the dozens of cases so treated not one has died, and practically all were quite recovered in two or, at most, three weeks.—I am, etc.,

Sunderland, Dec. 13th. THOMAS A. WATSON.

OPIUM RISKS.

SIR,—A copy of the *Journal of the Royal Society of Arts*, dated June 20th, 1913, has just reached my hands. In it there is an article upon "The Drying up of the Indian Opium Revenue," by Sir George Birdwood, K.C.I.E., C.S.I., M.D., LL.D., and I scarcely think that the opinions expressed therein by the learned author would meet with the unqualified approval of the medical profession as a whole. When a distinguished man, who happens to hold a medical degree in addition to his other attainments, expresses opinions upon medical matters in a lay journal, it is not unreasonable that the general public should think that the views which he holds represent those generally held by the profession at large. In such a case I consider it to be the duty of those of us who conscientiously disapprove of such opinions to publicly announce the fact. Hence this letter.

The original article is somewhat lengthy, so that it is impossible to quote it *in extenso*, and those who are interested may easily refer to it by the date above given. However, I give a few extracts.

> Indian opium is, as it always has been, the luxury of the rich in China, as champagne is in Europe and America, the only difference between them being that, while the daily use of champagne or other wines or spirits may prove deleterious to those who abuse the enjoyment of them, the smoking of the pure extract of Indian monopoly opium can in itself never be injurious to health, nor even when indulged in, so far as the time and the money spent on it are concerned, to so-called "excess."

And again, the author, having referred to his extensive personal experiences in India, both as a medical man and as an active justice of the peace, goes on to say:

> I should be prepared to defy any one to bring forward, from personal experience, a single authentic record of death or shortened life from habitual opium eating or drinking in India. . . . As for opium smoking, I am satisfied that it is of itself as innocuous as smoking hay, straw, or stubble.
>
> Excepting cases of accidental or wilful poisoning by opium, I never knew of a single instance of death from its use, and I have never met with any one who in his own experience has known of a case of death or of injury to health from the habitual eating or drinking of opium, as practised by the people of India proper.

Later, he says that opium in brief, is one of the greatest gifts of Providence to the peoples of the tropics, that it is a "soothing adjuvant to the digestion of a vegetarian diet" and a "prophylactic against malaria."

I scarcely think, Sir, that the majority of the medical profession could fail to regard these views as part of a dangerous and pernicious doctrine. Here in British North Borneo I have ample opportunity of witnessing the evil effects of opium smoking. Here we are in the midst of licensed opium farms and licensed gambling houses. Every facility is afforded to the Chinese and Javanese imported coolies to spend their money on these vices, to which habit they at length get so enslaved that they are reduced to a condition of perpetual servitude, being always in debt to their employers or others who have advanced money to them; from this they are only released by death or by disease sufficiently serious to incapacitate them from work as labourers. I frequently see in the *post-mortem* room cases of death which are directly or indirectly due to opium, as for instance, when the symptoms of disease have been masked by opium.

A coolie, known to be an habitual opium smoker, may be seen lying unconscious in the coolie house, with his opium pipe and paraphernalia lying beside him. The overseer, or the friends of the man, thinking him to be under the influence of opium, leave him alone to finish his sleep. The following morning a corpse is brought to hospital, and the *post-mortem* verdict of the doctor is cerebral malaria, uraemia, or what not.

One of the greatest difficulties in the administration of estate hospitals in this country is to prevent opium from being smuggled into the wards by patients or their friends. If it once gets inside its powers of injury are many. I need scarcely repeat in a medical paper how perforative peritonitis due to enteric fever, dysentery, appendicitis, etc., may not be recognized in a patient under the influence of opium. Furthermore, the number of cases of murder committed by Chinese coolies with the object of obtaining money wherewith to purchase the drug to allay the pangs of opium hunger must be considerable.

Sir George Birdwood puts forward also many political arguments showing how unjust we are to the Indian people in depriving them of their revenues; but surely the many thousands of Chinese in the Straits Settlements and Borneo are just as much British subjects, and just as much entitled to be protected against their own weaknesses, as any other of the component peoples of the British Empire

If the learned author of the article in question had only resided for a time in some more or less isolated places where the only obtainable household servants were opium-befuddled Chinese, I venture to suggest that he would sing less loudly the praises of the somniferous juice.—I am, etc.,

JOHN F. HORNSEY, B.A., M.B., B.Ch.Oxon.

Ranan, British North Borneo, Oct. 7th.

Public Health
AND
POOR LAW MEDICAL SERVICES.

POOR LAW APPOINTMENTS.

P. L. A.—The procedure was quite regular. In the case of a Poor Law appointment the guardians must either advertise the same, or it must be proposed and agreed at a board meeting that the election shall be proceeded with at the next meeting. It is not so in a public health appointment. Such appointments must be advertised.

AN inquiry is now being carried out in France, by order of the Minister of Education, as to the number and conditions of abnormal children. The inquiry is being made by primary teachers, who fill up uniform tables to be analysed by the inspectors. The law of March 28th, 1882, decrees that primary instruction is compulsory for children of both sexes aged from 6 to 13. This law does not apply to children who from the physical or intellectual and moral point of view are unfit to receive the ordinary teaching. The ministerial order classifies them as follows: Blind; deaf mutes; medically abnormal children—idiots, cretins, epileptics, etc., moral imbeciles with perverted instincts, and all children who cannot be cared for and educated collectively except under medical supervision; backward children who are in a state of mental debility; lastly, unstable children to whom the lack of mental equilibrium makes general discipline unbearable, and hence renders it impossible that they should attend a public school. Children who have remained more ignorant than others because they have been hindered in their studies by causes independent of their mental state, such as non-attendance at school, frequent absence, and so forth, are not regarded as abnormal. The inquiry includes all public or private schools.

Obituary.

SYDNEY JONES, M.B.LOND., F.R.C.S.ENG.,

CONSULTING SURGEON TO ST. THOMAS'S HOSPITAL, LONDON.

MANY will have noticed with much regret the announcement of the death, at the age of 82, of Mr. Sydney Jones. For many years he was the most prominent figure in the surgical work of St. Thomas's Hospital, to which his reputation brought many visitors, both from home and and abroad. Educated in the old school in the Borough, he carried on its traditions through the temporary phase of the Surrey Gardens, and in 1871, at the age of 40, he became full surgeon to the hospital when it migrated to its present home. He was the last St. Thomas's surgeon to take a "cub," as the apprentices were picturesquely termed.

Mr. Jones's career was typical of the period during which he worked; he created a reputation as a teacher of anatomy, he rearranged and catalogued the hospital museum, and five years after joining the staff he became the first ophthalmic surgeon to the hospital, continuing the tradition of Tyrrell, one of his predecessors.

MR. SYDNEY JONES.
(Photograph by Dane and Ball.)

It was, however, as a general surgeon that his reputation was made. A man of strong character, courage, and technical skill, he was in his day unsurpassed as an operator. His capacity in this branch of surgery was partly natural, but greatly increased by the assiduous care with which he practised unfamiliar operations on the dead subject. He was an operator of the old school, bold, brilliant, rapid, and at the same time absolutely safe. In many directions he was a pioneer—thus, he was an early follower of Sédillot in the performance of the operation of gastrostomy, then considered a great undertaking, and again he was early in the field in the excision of joints and removal of the scapula—a big operation he delighted in, and in its performance all his strength of character was displayed. Old St. Thomas's men will remember with admiration "Sydney's" Syme, his perineal lithotomy, and Cock's puncture, and not less his abdominal operations or the promptitude with which he diagnosed and dealt with extradural suppuration. Although he shone as an operator, Mr. Jones was not less respected for his knowledge and judgement. A very wide experience, gained by constant practical observation, reinforced by a certain surgical intuition, allowed him to give an opinion of the very highest value, which he was always prepared to act upon with promptitude and decision. Not less valued than his opinion in practice were the remarks he was able to contribute to discussions at the medical societies in London.

As a hospital surgeon his work was performed with the utmost regularity and efficiency. Some will remember his trim, alert figure as he came up the steps of the hospital, took a quill pen to sign the diet sheets from the hands of the porter, as was his habit, and hurried up the stairs to his wards. Here he made himself acquainted with the details of every case, probed the knowledge of his dressers, criticized the neatness of the dressings, cheered up his patients, who had the greatest confidence in him, and when he left his house-surgeon felt the whole weight of responsibility had been lifted, so thoroughly had everything been gone into.

Although strict in his requirements as to the fulfilment of duty, those who worked with Mr. Jones respected and admired him, while his hospitable home must afford pleasant recollections to many of his old pupils. He had the great advantage, in his days, of gaining a place on the full staff of his hospital at an age when his faculties and energy were at their best, and he made good use of his opportunities.

He received his medical education at St. Thomas's Hospital, and became M.R.C.S. and L.S.A. in 1853; he graduated M.B.Lond. in 1856, and took the diploma of F.R.C.S. in the same year. After holding the usual resident appointments he was elected assistant surgeon to St. Thomas's Hospital in 1860, and appointed lecturer on descriptive and surgical anatomy; for a time he was surgeon also to the Islington and Surrey dispensaries. In 1871 he became full surgeon to St. Thomas's Hospital with charge of beds, and was at the same time appointed joint lecturer on systematic surgery, appointments he held until 1891. He was not a voluminous writer, but contributed articles to the *Transactions* of medical societies, to the *Reports* of St. Thomas's Hospital, and to the periodical press on recto-vesical fistula, excision of the scapula, and on excisions of joints. At an early period of his career he edited a pathological catalogue of the St. Thomas's Hospital Museum. In 1883 he was elected a member of the Council of the Royal College of Surgeons of England, an office which he retained until 1891.

Mr. Jones retired some years ago, and went to reside with his son, Dr. Bevington Jones of Balham, and it was there that his death took place on December 9th.

RICHARD MACARTNEY, L.R.C.P., L.R.C.S.EDIN.,

EX-PRESIDENT OF THE GLOUCESTERSHIRE BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

WE regret to record the death, on December 6th, of Dr. Richard Macartney, of Cinderford, Gloucestershire, one of the best known and most popular men, whether in or out of the profession of medicine, on the Welsh border.

Dr. Macartney—by descent a North of Ireland man—was born in Ceylon in 1861, his father being chief of the police service of that dependence. On completion of his general education he became a student first of Queen's College, Belfast, then of the Carmichael College of Dublin, and eventually received the diplomas of the Royal Colleges of Physicians and Surgeons of Edinburgh. Within a year or two he settled down at Cinderford, and rapidly acquired a large practice as surgeon to coal and other mines in the Forest of Dean. Later on he also worked as a medical officer and public vaccinator of the Westbury and Severn Union, and held some of these appointments up to the time of his death. For the past six or seven years, however, his most important occupation had been that of coroner for the Forest of Dean division of the county of Gloucester.

He joined the British Medical Association quite early in his career, and lived to prove himself one of its most loyal and useful adherents in the West of England. Elected to the office of President of the Gloucestershire Branch some eighteen months ago, he brought to its work marked business power and a highly useful capacity for bringing out the salient points of any question in a very brief statement. The honorary officers of the Association in all parts of the country have had an exceptionally trying time during the past two years or more, and nowhere have the difficulties with which they have had to contend been greater than in the neighbourhood of the Forest of Dean. Dr. Macartney did not spare himself, and his labours in this connexion,

coupled with the loss of his wife about a year ago, at the end of a very distressing illness, no doubt served to undermine his strength, and thus account in some measure for the fact that a man who throughout his career was conspicuous for the possession of great mental and physical vitality, should have succumbed so rapidly to an attack of pneumonia.

As a student Dr. Macartney was a well-known football player, as also a very fair cricketer, and he remained to the end a strong supporter of these and other forms of outdoor exercise. He was also a first-class game shot, and the winner of many clay-pigeon shooting and other like trophies. He did a good deal of work for the St. John Ambulance Association as a lecturer and examiner, and had attained high rank as a Freemason. As a private individual he enjoyed great and well-deserved popularity among all classes of society, for he was not only a loyal man to his friends, but an excellent companion—never at a loss for a story, and able to tell it with effect. He possessed, in short, the cheery, vivacious temperament often to be found in the best class of Irishman. The facts that his friends clubbed together to present him with a motor car when his election to the office of coroner was announced some eight years ago, and that he had filled the high office of President of the Gloucestershire Branch of the British Medical Association, bear eloquent testimony to the position which he occupied in the affection and esteem both of laymen and professional colleagues in his neighbourhood.

Dr. Macartney, as has been mentioned, was predeceased by his wife, but is survived by a daughter. He was buried in Cinderford on December 9th, his funeral being accompanied by full Masonic honours.

We regret to have to announce the death of Dr. J. O'Donovan, J.P., of Kingstown, who enjoyed an extensive practice in the south of County Dublin, and was for many years known for his charitable interest in the poor of the district. He manifested in a peculiarly fitting manner his humanitarian instincts when he erected as a memorial to his son, Dr. R. O'Donovan, Superintendent Medical Officer to the Kingstown Urban Council, a shelter for cabmen in the Royal Marine Road. Dr. O'Donovan suffered from heart disease last summer, and went for treatment to England, but on his return in the autumn he was much worse. Since then he had been confined to bed. His demise is mourned by a wide circle of friends and admirers.

Colonel John Henry Newman, Bengal Medical Service, retired list, died at Coolatta, Killinardrish, County Cork, on November 30th. He was born on November 9th, 1844, educated at Queen's College, Cork, took the degrees of M.B. and M.Ch. in the Queen's University of Ireland, and entered the Indian Medical Service as assistant surgeon on September 30th, 1867. He became surgeon on July 1st, 1873; surgeon-major on September 30th, 1879; brigade-surgeon-lieutenant-colonel on June 1st, 1892; and colonel on March 29th, 1895. He was granted a good-service pension on April 1st, 1900, and retired on July 14th, 1900. Most of his service was spent in political medical employment under the Indian Foreign Office. In 1879 he was appointed medical officer of the Mhairwarra Battalion, now the 44th Merwara Infantry, with which post was combined the civil surgeoncy of Ajmir. In 1834 and 1839 he officiated as Agency Surgeon, Rajputana, and administrative medical officer of the Rajputana States, and was confirmed in that post in 1892. From July to November, 1893, he acted as Inspector-General of Civil Hospitals in Bengal. On promotion to colonel he was posted in a similar capacity to the Central Provinces in March, 1895; in November, 1897, was transferred to Bengal; and in April, 1898, chose to return to military duty as administrative medical officer of the Punjab Frontier Force. He served in the Abyssinian war of 1878, and in the second Afghan war in 1878–9, taking part in the two expeditions in the Bazar Valley, and received the medals for these two campaigns.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Alessandro Cugini, professor of forensic medicine in the University of Parma; Dr. Deboeck, professor of forensic medicine and psychiatry in the University of Brussels; Dr. Gendre, an ophthalmologist of Toulouse; Dr. Jesse S. Myer, of St. Louis, author of *The Life and Letters of William Beaumont*, and of clinical papers dealing largely with the physiology and pathology of the digestive system, aged 40; and Dr. Fedor Schuchardt, professor of psychiatry in the University of Rostock, aged 65.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

The following candidates have been approved at the examinations indicated:

M.D. (*Clinical Examination*).—H. F. W. Adams, R. Aitken, B. M. Allan, T. M. Anderson, G. L. Brunton, F. D. Cairns, G. J. Carr, J. Cathcart, F. O. Clarke, H. Evans, T. R. Evans, W. N. W. Kennedy, W. Macdonald, W. F. M'Lean, J. S. Manson, A. E. Moore, D. M. Morison, T. P. Noble, S. D. Reid, A. A. Rutherford, W. M. W. Shepherd, A. N. Smith, G. Walker, A. Watson, G. A. Wyon.

Final M.B., Ch.B. (*Forensic Medicine*).—R. C. Aitchison, M. Barseghian (Basil), J. G. Bell, T. H. S. Bell, P. N. Berry, E. J. Blair, D. G. Boddie, R. S. Brunton, W. A. Coats, J. Dale, J. W. Darling, Georgina E. Davidson, C. L. Dold, W. B. H. Dundee, G. D. Fairley, E. G. M. Gilchrist, A. S. Glynn, D. C. Graham, G. D. Hamilton, F. W. Hird, M. P. Inglis, H. Jackson, L. F. E. Jeffcoat, R. W. R. Jones, L. Lappin, C. W. Lewis, G. Lilico, J. Loftus, E. W. Louw, G. A. G Macdonald, W. H. M'Granahan, E. L. Mackenzie, D. J. Max, G. T. Mowat, R. Power, A. M. Razakhan, R. C. Rogers, A. R. Ross, M. A. L. Sayeed, A. C. Shaw, J. C. Sinclair, J. H. Smith, L. J. Spence, P. A Strasheim, R. J. Tait, J. S. Taylor, A. R. Thomson, J. Z. Truter, C. H. Wan, W. G. Weston, E. L. White, J. A. C. Williams, G. S. Williamson, E. W. N. Wooler, J. A. Young, J. B. Young. (*Public Health*).—M. Barseghian (B.), J. G. Bell, P. N. Berry, E. J. Blair, R. S. Brunton, F. C. Chandler, W. A. Coats, Georgina E. Davidson, C. L. Dold, E. G. M. Gilchrist, A. S Glynn, D C. Graham, G. R. Grant, Agnes R M. Greig, W. W. Hallchurch, F. W. Hird, H. Jackson, F. N. Johns, L. Lappin, C. W. Lewis, J. Loftus, E. W. Louw, G. A. G. Macdonald, W. H. M'Granahan, E. L. Mackenzie, D. J. Max, B. Mendelssohn, E. M. Molesworth, G. T. Mowat, W. Murdoch, R. Power, R. C. Rogers, A. R. Ross, H. P. Rudolf, B. Shires, P. A. Strasheim, R. J. Tait, A. S. Taylor, A. R Thomson, J. Z. Truter, P. G. Tuchy C. H. Wan, W. G. Weston J. A. C. Williams, G. S. Williamson, E. W. N. Wooler, J. A. Young.

Final (*All Subjects*).—E. Allan, G. A. M. Anderson, S. Arnott, Vera N. Bolotine, G. A. Borthwick, H. Boyle, W. T. Brown, J. W. K. Bruce, J. V. Buchanan, W. S. H. Campbell, J. W. Cannon, P. A. B. Clark, J. B. Cook, G. Cromie, J. B. Cunningham, M. F. W. Davidson, W. Duguid, W. B. H. Dundee, B. V. Dunn, J. M. Elliott, A. Eprile, D. Gilmour, C. Gordon, G. R. Grant, D. A. R. Haddon, Julia V. Henslow, H. C. Hinwood, J. H. G. Hunter, R. C. Irvine, Jamal-ud-din, F. N. Johns, R. W. R. Jones, Margretta J. Keers, D. Kerr, J. L. C. Lagois, W. A. Lethem, E. Llewellyn, J. M'Craig, J. S. M'Intosh, B. R. Mackenzie, H. A. Macmillan, Rosanna E. Macmillan, G. M'Neill, D. M'Vicker, J. T. H. Madill, A. C. Mann, J. R. Menzies, S. I. Mitra, S. C. Mitra, J. B Mitton, H. M. Moir, S. R. Moll, A. J. M'C. C. Morrison, A. H. Murch, B. P. B. Naidu, R. H. H. Newton, K. P. Panikkar, A. E. S. P. Pattison, M. Plum, E. G. C. Price, J. K. Reid, M. J. D. Roche, J. A. N. Scott, E. A. Seagar, J Sircar, J. H. Smith, V. R. Smith, R. A. Stark, R. J. Tait, J. S. Tomb, J. Z. Truter, M. B. Walker, J. H. Ward, J. H. D. Watson, W. N. Watson, W. G. Wyllie.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An Ordinary Council was held on December 11th, when Sir Rickman J. Godlee, Bart., President, was in the chair.

The Annual Congregation of the American College of Surgeons.

The President reported his attendance at Chicago on November 13th on the occasion of the first Annual Congregation of the American College of Surgeons; and also that he had visited Toronto, where the degree of LL.D. was conferred upon him.

The late Mr. Sydney Jones.

A resolution was adopted expressing the sympathy of the Council with the family of the late Mr. Sydney Jones, a past member of the Council, and its appreciation of his services to the College.

Grant of Diplomas.

Diplomas of Fellowship were granted to the following twenty-eight candidates found qualified at the recent examination:

R. M. Rowe, P. J. Franklin, T. H. C. Benians, G. H. Chisnall, T. B. Davies, M. Bates, C. W Archer, E. H. Rainey, J. L. Ritchie, F. H. Diggle, J. S. Jobson, S. E. V. Brown, A. L. Moreton, C. T. Neve, R. A. Ramsay, E. G. Schlesinger, N. Duggan, W. A. Sneath, S. B. Radley, F. G. Bell, N. C. Lake, J. T. Morrison, E. Rayner, J. S. Bookless, A. Gibson, J. Gow, R. C. MacQueen, and J. C. Stewart.

Diplomas of the Licence in Dental Surgery were granted to fifty-four candidates found qualified for the Licence.

Court of Examiners.

Mr. W. G. Spencer was re-elected a member of the Court of Examiners.

Royal Commission on Venereal Diseases.

In response to a request from Lord Sydenham, Chairman of the Royal Commission on Venereal Diseases, the Council selected to give evidence before the Commission Mr. D'Arcy Power, Surgeon to St. Bartholomew's Hospital; Mr F. R. Crosse, President of the Ophthalmological Society of the United Kingdom; and Mr. S. G. Shattock, Pathological Curator of the Museum of the College.

Annual Meeting of Fellows and Members.

The Council adopted a reply to the following effect to the resolutions passed at the annual meeting of Fellows and Members on November 20th, 1913 (BRITISH MEDICAL JOURNAL, November 29th, p. 1462):

With regard to the first resolution affirming the desirability of admitting Members to direct representation on the Council of the College, and the second resolution requesting the Council to include in its annual report a balance sheet showing fully and without reserve the assets and liabilities of the College on Midsummer Day, 1913, the Council replied that it did not think it was called upon to reconsider its decisions respecting these subjects. With regard to the third resolution, expressing dissatisfaction with the administration of the College finances as carried out by the Council, the Council expressed the opinion that the satisfactory financial position of the College at the present time is sufficiently evident to any Fellow or Member who studies the published accounts.

APOTHECARIES' HALL, DUBLIN.

ON the evening of November 29th Alderman McWalter, M.D., the Governor of the Apothecaries' Hall, Dublin, entertained a large number of guests at dinner at the Hotel Metropole. Among those visitors who spoke were the Presidents of the Royal College of Surgeons, of the University College, and of the Incorporated Law Society. The Recorder of Dublin, speaking in reply to the toast of the City of Dublin, said that he considered that the bad housing conditions of the poorer classes was responsible for a large proportion of the crime that came before him in his official position. The after-dinner speeches were varied by several pleasing musical items.

Medico-Legal.

"UNDER THE INFLUENCE OF DRINK."

AN inquest in Southwark on December 8th on the bodies of two young men who had been killed in the street ended in a verdict of manslaughter against the driver of a motor lorry which knocked them down, the jury adding that he was driving at an excessive speed and was "under the influence of drink."

All the witnesses agreed that the accident was due to the driver passing a stationary tramway car at an excessive speed. The constable who arrested the accused said that he had had more than twenty-seven years' experience in the police force, and he was sure that the driver was "under the influence of drink." He seemed like a man who did not care whether he met with an accident or anything else. He was absolutely unconcerned. He agreed the driver had rendered every assistance in extricating the two injured men from under his lorry, and that it was true that as he himself had an accident he must have been suffering from shock, but nevertheless adhered to his belief that that the accused was under the influence of drink. A second police constable who took part in the arrest described the man simply as "drunk."

Evidence was also given by the divisional surgeon, Dr. Athol R. Moore, who said that after he had examined the arrested man he wrote the following certificate: "I have examined this man and find him to be under the influence of alcohol. He is not in a fit state to be in charge of a motor vehicle. Fit to be detained." In reply to questions from the coroner, Dr. Waldo, as to what distinction the witness drew between the terms "drunk" and "under the influence of drink," Dr. Moore replied that he was of opinion that if a motor driver had had sufficient drink to take the keen edge off his wits he was not in a condition to drive a motor vehicle. Asked if he considered the driver was drunk, he replied that he did not consider that he was sober. Whether the term "drunk" should be applied to him depended upon how the meaning of the word "drunk" was to be defined. The Medico-Legal Society had been endeavouring to define its meaning, but it had not yet formulated a satisfactory definition, and probably no one ever would. The accused was not drunk in the popular sense of the term, but he had had sufficient alcohol to take the edge off his wits. It was possibly true that he had developed shock by the following morning, but at the time the witness saw him, the shock—if he was suffering from shock at all—was masked by the effect of alcohol.

COLONEL GORGAS, M.D., Chief Sanitary Officer of the Panama Canal, has been elected a honorary Fellow of the Royal Sanitary Institute; and Colonel Guy Carleton Jones, M.D., Director-General of the Medical Service of the Militia of Canada, and Dr. William Robertson, M.O.H., Leith, have been elected Fellows.

Medical News.

WE are asked by the Secretary to state that the London Post-Graduate Association, 20, Hanover Square, London, W., is to be wound up on December 31st.

THE Royal College of Surgeons of England, including the Museum and Library, will be closed from the evening of Wednesday, December 24th, until the following Monday morning.

THE White Star line have arranged for two vessels of their fleet, the *Laurentic* and the *Megantic*, to make a series of cruises from New York to the West Indies and the Panama Canal during the winter and spring of 1914. The *Laurentic* is due to leave New York for a cruise of twenty-eight days on January 31st and March 4th, and the *Megantic* on February 11th and March 14th. The *Laurentic* concludes the series with a sixteen days' cruise from April 4th.

THE After-care Association, which is so serviceable in the rehabilitation into ordinary life and employment of poor persons discharged recovered from asylums for the insane, quietly does much useful work in finding suitable employment for, and otherwise aiding, those whose mental illness has interrupted their industrial careers. Two important meetings have lately been held in support of its funds, the first at Rubery Hill Asylum, Birmingham, in which city a branch was started in the early part of this year, and has already done much good work. The second meeting was at Bootham Park Hospital, York, which resulted in the addition of many new subscribers to the York branch. Both meetings were addressed by Mr. Thornhill Roxby, the energetic Secretary of the Association, the headquarters of which are at the Church House, Dean's Yard, Westminster. This association is the only one of the kind in Great Britain, and last year 391 cases were dealt with by the Council.

A MEETING of about forty members of the newly formed group of school medical officers of the Society of Medical Officers of Health was held at the Royal Sanitary Institute on December 6th, and was presided over by Dr. Robert Hughes, the school medical officer of Stoke-on-Trent. It was decided to form subgroups corresponding to the branches of the society. After some discussion as to the best means of securing adequate remuneration for school medical officers of all grades it was decided to communicate to the British Medical Association and the Society of Medical Officers of Health the opinion of the group that the minimum salary of a whole-time senior or responsible medical officer engaged in school medical inspection should be at the rate of £500 per annum, and in large towns proportionately higher; and that the minimum salary of whole-time junior officers should be £350 per annum, rising by annual increments of £25 to at least £500. The next meeting of the group is to be held at the Royal Sanitary Institute on January 3rd, 1914.

THE annual meeting of the Hospital Almoner's Council was held on December 10th at the Central Buildings, Westminster, with Sir Malcolm Morris, Vice-President, in the chair. The Secretary stated that fifteen candidates for almoners' posts were in course of training; he referred to the appointment of an in-patient almoner at Great Ormond Street Hospital for Sick Children, and drew attention to the numerous appointments of assistant almoners, as evidence of appreciation of the system on the part of those hospitals which had adopted it. In moving the adoption of the annual report, Sir Malcolm Morris said that, after forty-eight years' experience of hospitals, he was convinced that there was no more important work being done in London than that of the almoners in supplementing the medical treatment provided by the hospitals. Unless the work of hospitals was linked up with that of charities outside their walls patients could not benefit fully by the treatment they received. He referred to the necessity of careful training for the work as provided by the Council.

THE schoolroom blackboard seems to have been subjected to a fair amount of criticism at the International Congress on School Hygiene, held at Buffalo in August last, judging by Dr. James Kerr's account of the proceedings, given at the meeting of the Illuminating Engineering Society on November 18th. It is, of course, from the point of view of illumination that the blackboard is challenged. In America, instead of having the boards at the end of the

class-room, behind the teacher, it is the custom to place them on the right-hand side of the children, opposite the window. It is found, according to some detailed measurements which were presented to the Congress, that the boards, when in this position, actually diminish the lighting on the desks by an average of 15 per cent., while white boards increase the illumination almost by the same amount. Even slighter changes than this are important when the general illumination is poor. Apparently the European practice of stationing the blackboards at the end of the room makes only a negligible difference to the desk illumination. Apart from this aspect of the question, however, the difficulty of lighting the blackboard efficiently, and of preventing glare from its shiny surface, is putting educationalists on the alert for some substitute. One Viennese delegate at the Congress urged the value of rolls of white paper on an easel, and others suggested green or brown boards in place of the universal black. If blackboards are retained care should be taken at least to tilt them so as to get the regular reflection away from the children's faces, and thus to make this convenient teaching instrument less of an eye torture than it was in the schooldays of many of us.

THE University of the Philippines which was founded under the authority of the United States by an Act of the Philippine Legislature in January, 1911, includes faculties of arts, of medicine and surgery, agriculture, veterinary science, engineering, law, and a school of fine arts, each possessing an educational college. The entire teaching staff of the University consists of 12 full professors, 8 professorial lecturers, 20 associate professors, 18 assistant professors, 57 instructors, 10 lecturers on law, 21 lecturers on special subjects, and 7 assistants. The Philippine Medical School was founded in 1905, before the University was established. Seven professors, 12 associate professors, 6 assistant professors, 14 instructors, with 2 temporary instructors, 16 special and 6 assistants, belong to the Medical College. A five years' course is required. Clinical facilities are afforded by the Philippine General Hospital, which has 200 beds, with a free dispensary; the Bilibid Prison Hospital; the Hospital for Infectious Diseases of San Lazaro, which includes departments for incurable tuberculosis, small-pox, diphtheria, plague, cholera, and other dangerous communicable diseases. Then there is the San Juan del Monte Tuberculosis Sanatorium; the "Gota de Leche" (*Goutte de lait*), for undeveloped and abnormal children; and the municipal and tuberculosis free dispensaries of Manila. In the course of last year more than 80,000 patients passed through the clinics. There is ample laboratory accommodation, with facilities for individual work by students in animal experimentation, and a sufficient supply of all the ordinary laboratory animals to meet the requirements of the courses, as well as for purposes of investigation. There are also a Graduate School of Tropical Medicine and Public Health, in which courses of instruction are given throughout the year. The school gives the degrees of Tropical Medicine (D.T.M.) and Doctor of Public Health (D.P.H.).

PROFESSOR OPPENHEIM of Berlin has reported 2 cases of cerebellar tumour treated by operation (*Berl. klin. Woch.*, November 3rd). The surgeon in both cases was Professor Borchardt of the Virchow Krankenhaus. The first was a case of tumour involving the vermis and right cerebellar hemisphere, and the operation was performed under local anaesthesia in three stages, owing to the collapse which threatened to supervene at any moment. It was only at the third sitting, which lasted for two hours, that the tumour was successfully dissected and removed from its bed. It proved to be a fibro-sarcoma. Before the operation was completed dyspnoea began to set in and continued throughout that night, with periods of complete apnoea, and Cheyne-Stokes respiration, with prolonged rattling in the trachea. Artificial respiration was continually required until the patient turned the corner and resumed the automatic function. The pulse remained good throughout and convalescence was very rapid, so that three months after the operation scarcely any symptoms of his original malady were present. The other case was that of a tumour in a child of 7, which involved the left cerebellar hemisphere, and required two operative stages under general anaesthesia. The child was completely ataxic and amaurotic at that time, but a year after the operation could count fingers at 2 ft. and was able to walk three hours without undue fatigue. The recovery of the smallest degree of vision once papillitis has advanced to a stage in which complete blindness has ensued, is most exceptional, so that this particular case deserves a position among the triumphs of surgery.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

VERITAS desires to know the date and treatise in which the term "thyroid insufficiency" was first used.

RADIUM EMANATIONS.

THE fee charged by the Radium Institute, 16, Ridinghouse Street, London, W., for treatment with radium emanation solution is three guineas a week, and it is stated that a course of at least six weeks is essential if any benefit is to be expected. A correspondent wishes to know whether a reliable emanation solution can be obtained for a smaller sum elsewhere.

ANSWERS.

M. W. B. writes to advise "St. Kitts" to consider the question of gall stones, and treat accordingly.

TREATMENT OF TERTIARY SYPHILIS.

DR. J. BARKER SMITH (Herne Hill, S.E.) advises "Country Practitioner" to try the effects of *nascent* iodine on the lines lately tried for tuberculosis. Ten grains or less of potassium iodide in peppermint water every morning for a week, immediately after breakfast: follow in four and eight hours by well diluted chlorine water. Take a dry bottle, put into it a drachm of powdered potassium chlorate, pour on the chlorate twenty drops of strong hydrochloric acid and evolve the chlorine, entangle it by shaking with water, and make up with water to six ounces. A tablespoonful in water or lemon water should be taken four and eight hours after the iodide. Again, by permanganate solution or hydrogen peroxide applied locally the effects should be intensified. I have met with success, so that I have suitable labels printed. I am convinced that nascent iodine is effective, and in one case of partial paralysis in a verified case of tertiary syphilis without a history, results surprised me. In this case the blood acidity was increased (verified by Joulie's method), and the urine, as noticed by the patient, was wonderfully cleared up.

LETTERS, NOTES, ETC.

THE EXECUTIONER SURGEON.

DR. FREDERIC WOOD JONES (London) writes: It has been a great disappointment to me to note that, as an organ only the medical profession, you have taken up what can only be termed a flippant attitude towards a subject which, though raised in this instance in the lay press, has before now engaged the attention of medical men. How the suggestion that the regulation of the means of putting our fellow creatures to death should be ordered by the scientific inquiry of medical men, could be regarded as a "silly joke," or as "offensive," neither I nor any thinking person can see. That it should be regulated by a person ignorant of anatomical and physiological science is the abuse, and no earnest suggestion for the alteration of this state of affairs should be stigmatized as "silly" or "offensive." Medical men have devoted thought and time to this question; experiments have been done, and sober suggestions have been made, and yet, though animals are slaughtered with all the humanity that science can suggest, our fellow unfortunates are still hanged with mediaeval pageant, and by methods that are crude, cruel, and unscientific.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.